QUANTUM

SCIENCE FICTION & FANTASY REVIEW

Summer 1991 No. 39 $3.00
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Norman Spinrad
on the Importance of SF

Michael Swanwick
on 1990's Short Fiction

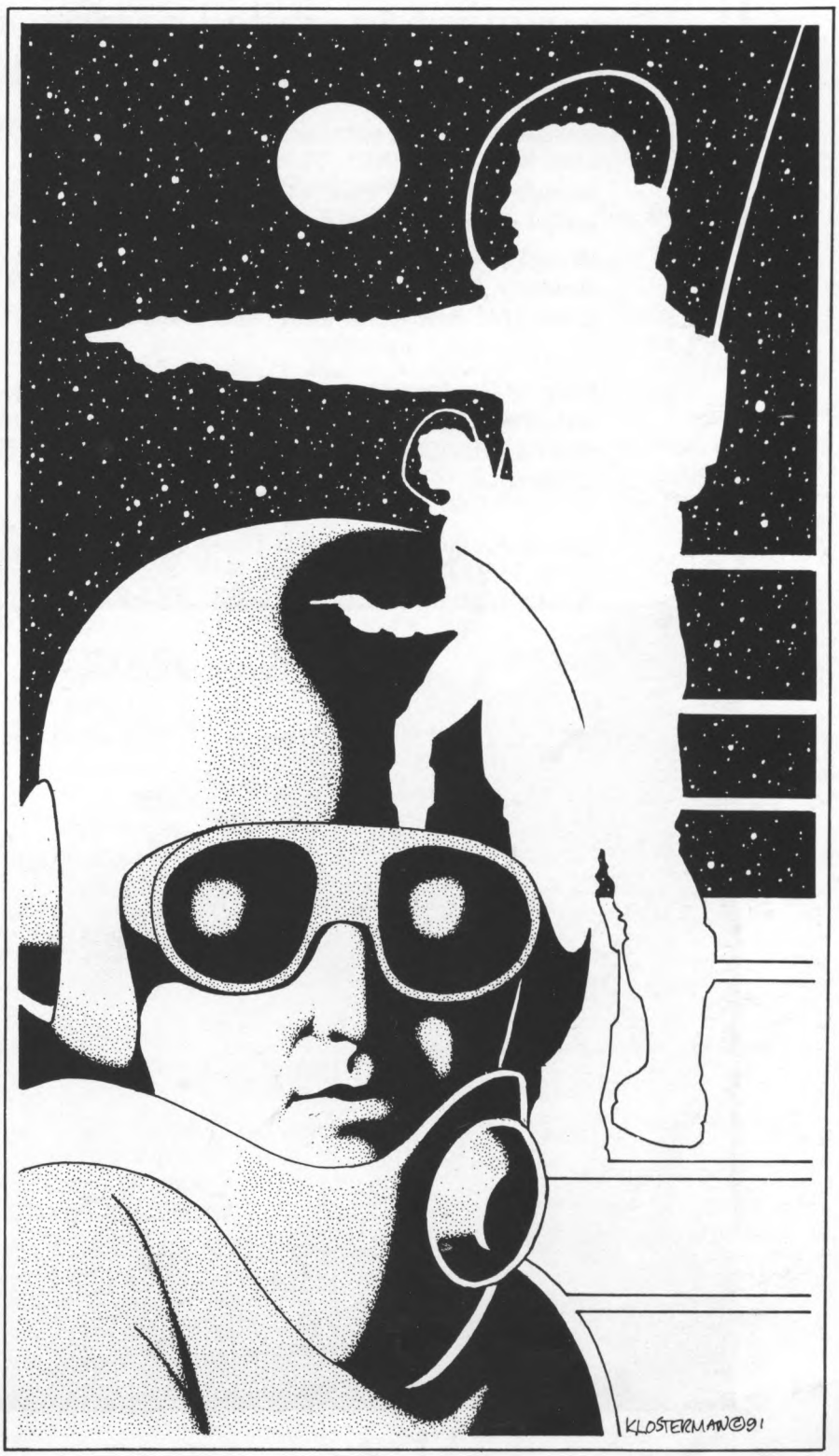
Michael Bishop
Attends a Dylan Concert

Poul Anderson
on SF vs. Fantasy

Ray Bradbury
Interview

Jonathan V. Post
on the End of Time

Plus:
1990: The Year in Speculative Fiction



SUNDERED SOUL

By Alfred Tella

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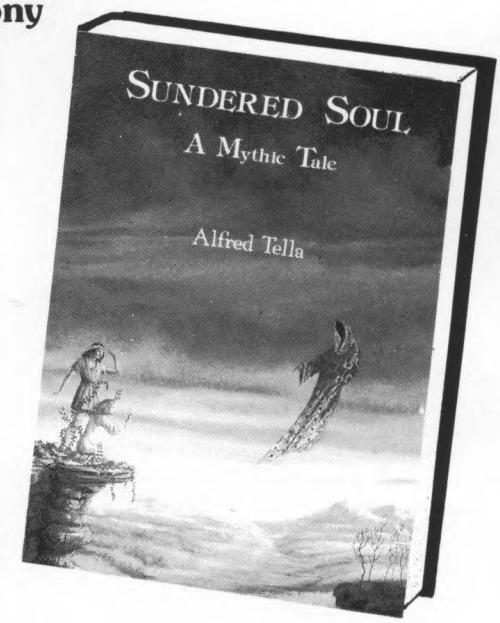
–Piers Anthony



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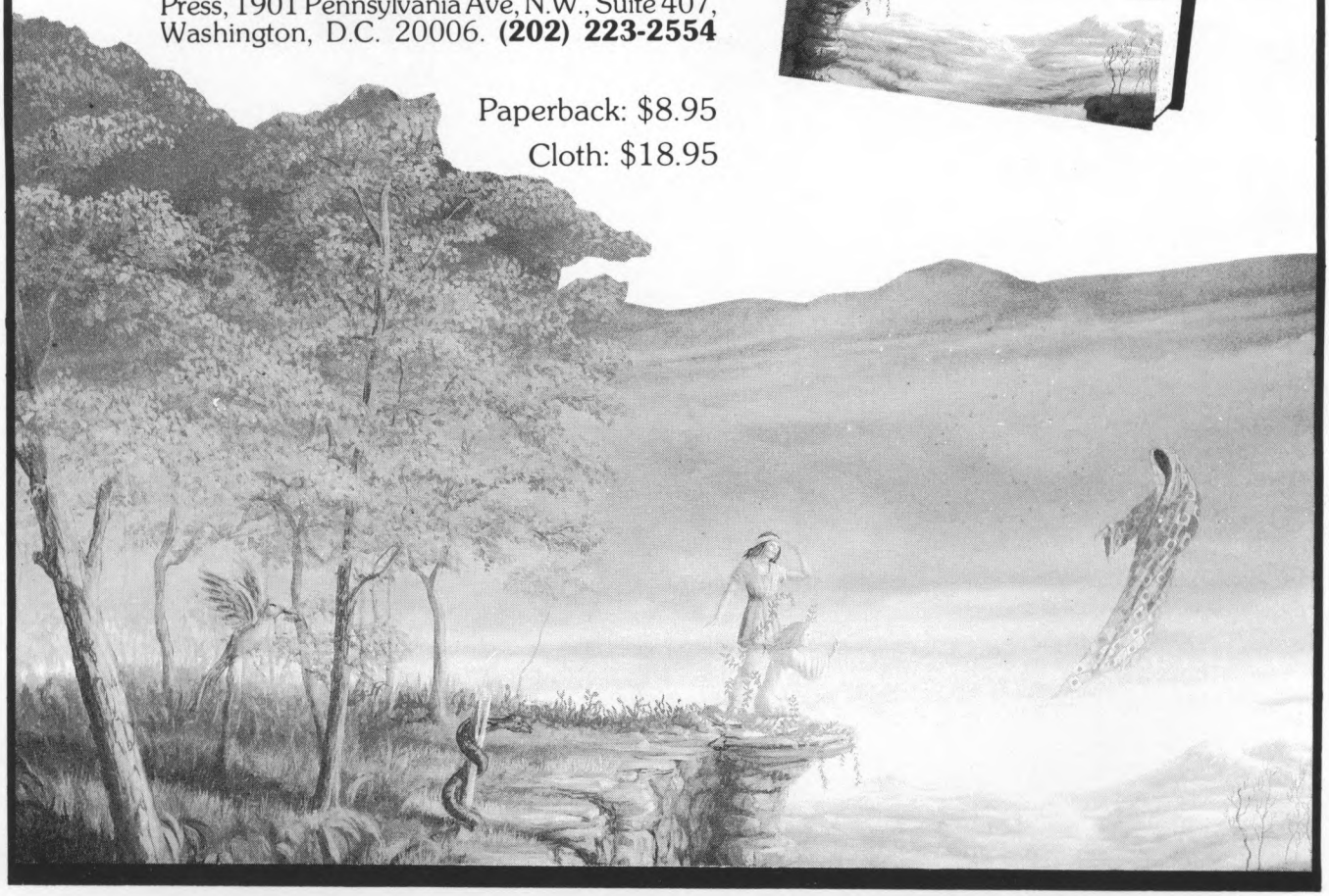

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QUANTUM

SCIENCE FICTION & FANTASY REVIEW

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IMPULSE

Doug Fratz

Welcome to *QUANTUM* 39. You may have noticed that this issue is dated Summer 1991. The reason for this is that we've bowed to the inevitable and changed to a three-times-per-year publication schedule.

Since declaring this magazine a quarterly (up from *two* issues per year), in 1987 with *THRUST* 26, we have managed to publish exactly three issues each year, albeit not like clockwork, to be sure. I finally had to admit to myself that an issue every three months was an impossible schedule to keep up for any length of time. There was no slack. When I fell behind, I absolutely never got fully caught up, and indeed never ever even gained back any lost ground. Something had to give.

With the change to three-issues-per-year (there should be a word for this—quadmonthly?), I hope that we will be able to adhere to a regular schedule at last.

The Issue At Hand: This issue features the first of our annual reviews of the past year, "1990: The Year in Speculative Fiction." Our call for opinions brought in responses from about a dozen pundits, which Tony and I molded into a brief but wide-ranging review. I hope that next year we will have more input from additional staff members and others, once everyone sees what it is we are doing with this feature. We look forward to everyone's opinions on whether this review of 1990 served its purpose, and what changes or additions are needed to improve it in coming years.

Our lead article this issue, "Science Fiction and the Transformation Crisis," is by Norman Spinrad on the importance of science fiction to the future of mankind. Long-time readers will recall that *THRUST* 9, published way back in 1977, was a special *Norman Spinrad Issue*. It's good to have Norman back after so many years. Those seeking more of Spinrad's insightful essays are recommended to obtain his collection of essays published last year by Southern Illinois University Press, **Science Fiction in the Real World**. He is currently enjoying the life of the expatriate in Paris.

This issue represents the very first appearance of Michael Swanwick in these pages, with an exhaustive look at the short fiction of 1990, "One Thousand Stories." Michael has been producing some excellent commentary on the field in recent years (including the article in *Asimov's* that started the Cyberpunks vs. Humanists debate a number of years ago) and I'm happy to finally be able to feature him here.

Our interview this issue is with one of science fiction's Grand Masters, Ray Bradbury, conducted just a few months ago in Paris. It's not very often that an interview comes along with one of the field's greatest authors. I only wish it could have been longer.

Our regular columnists this issue are represented by Michael Bishop and Poul Anderson. Michael writes about attending, with his son, a Bob Dylan concert last Fall. Those of you who remember Michael's short story, "The Bob Dylan Tambourine Software & Satori Support Service Consortium, Ltd.," know that Dylan has indeed had some modicum of influence on Mike's fiction. Meanwhile, Poul Anderson takes on the topic that has been raging in *QUANTUM* for several issues, the science fiction versus fantasy debate.

I am pleased to introduce to you this issue *QUANTUM*'s newest columnist, science editor Jonathan V. Post. Jonathan is currently working at Rockwell International's Space Division in advanced software engineering, artificial intelligence, and manned lunar and planetary mission planning, and has been Mission Planning Engineer for the Voyager 2 encounter with Uranus and worked with the Galileo Jupiter flight, the Magellan flight to Venus, and the space shuttle and space station. Credit for his recruitment goes to assistant editor Nancy Hayes. Jonathan decided to hit the ground running, and in "Human Destiny and the End of Time" he tackles the topic of the ultimate end of the universe.

Parting Thoughts: I'm sorry to report that last issue was the last for assistant editor Sharon Martin, who reported that her "workload is completely out of hand." (I can sympathize!) Sharon serves as secretary of the Oklahoma Writers' Federation and contest chairman of the Poetry Society of Oklahoma. The synopsis and first two chapters of her novel were entered into and won two separate contests. Sharon will be spending her time writing and teaching poetry workshops.

Sharon joined the *QUANTUM* staff in the summer of 1989, and has done a fine job over the past year and a half keyboarding material, writing the *Staff News* feature, and soliciting classified advertising, as well as writing book reviews. She will continue to write reviews for us, but her assistance in other areas will be missed.

Birth of a Salesman?: Speaking of advertising sales, although I do not plan to add another assistant editor at this time, I do still need to add an advertising director. The job would require only about 20-25 hours of work per issue to line up some advertising from small publishers and other such advertisers. (I've pretty much given up on attracting the major New York publishers.)

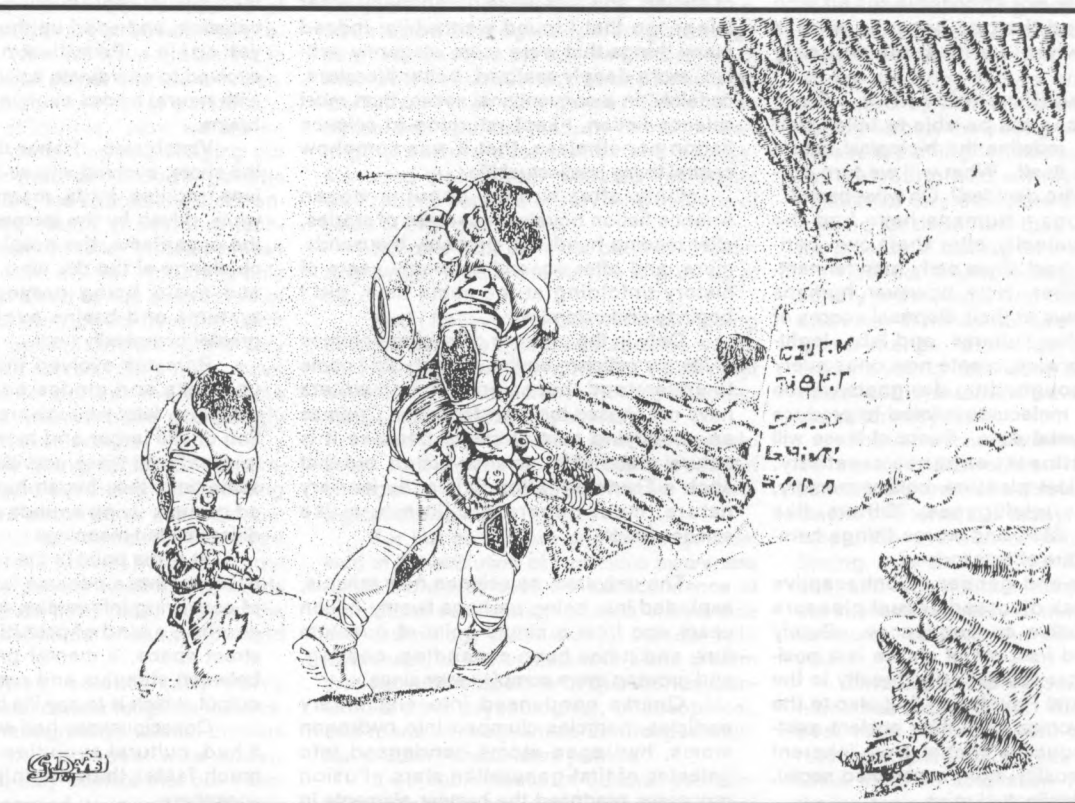
This issue represents a new low in advertising for the magazine, so we can only go up from here. I've been handling this side of the magazine myself for the past few issues, and I just don't have time to do it right. Please contact me if you are interested in helping us out; it may end up being a more creative job than you might think...

And Now Back to the War: How many of you, like me, lost much of two months of your life, from mid-January to mid-March, watching the heaviest-hyped war in history? In many ways, it was good to know that all those billions in defense spending did not go to line the pockets of dishonest defense contractors, and to learn that much of our high-tech defense-toys actually work just the way they should against a reasonably well-equipped third-world opponent. It was good to see that we have at least a few competent military strategists. (Anyone catch the mentions of the *Jedi Knights*, the cadre of young strategists who helped Schwartzkof plan the strategies and tactics? Could it be that some or even much of the war's success can be attributed to a group of junior geniuses who identify with SF and happened to be the only ones to understand the capabilities and limitations of the high-tech hardware? It seems a plausible enough theory...)

The least-hyped but most important high-tech hero of The War in the Gulf was, I suspect, the satellite reconnaissance photographs, which probably showed, using various wavelengths and with high resolution, virtually everything that was going on, as soon as the boys in the back room had a change to look the data over. When a sharp-sighted boxer is fighting a nearly-blind foe, it's a miss-match every time. Even if the blind boxer gets to hear the battle plan several days early on CNN...

Coming Soon: "So Maybe I Should Do A Little Self-Promotion?" by Nancy Springer, "How to Get A Job Like Mine" by Joe Haldeman, "Believable Action" by Ardath Mayhar, an assessment of the state of SF commentary and criticism by Doug Fratz, and interviews with Barbara Hambly, Boris Vallejo, Janet Morris, Lisa Goldstein, Lawrence Watt-Evans, and Geoff Ryman, and our brand-new feature, *QUANTUM Forum*. Q40 will be out in August.■

SCIENCE FICTION AND THE TRANSFORMATION CRISIS



Norman Spinrad

What follows is the text of a speech delivered (in English) to the SALON DU LIVRE DE JEUNESSE in Paris on November 30, 1990. This annual event is a kind of mini-ABA for children and young adult books, with booths, displays, celebrities, and events. With several interesting differences.

First, plenty of free food and drink are supplies. Second, awards are given out for writers and illustrators. Third, there is a guest of honor, in this case Tomi Ungerer. Fourth, the public, that is the kids, pay their way in, and can buy the goods displayed in the booths; attendance was big, and things sold. Fifth, within the Salon, there is a colloquium, attended by professionals only-publishers, editors, writers, and educators-and this was the audience to whom my speech was delivered. Other panelists included writers, educators, critics, and a French astronaut.

Interestingly enough in light of this speech, while this was not a science fiction event, and while SF and fantasy were only a small portion of the books displayed, there was an elaborate interactive display of a Mars colony, complete with a kind of bounce-pad to simulate the lower gravity.

And the poster for the event, plastered all over Paris, showed a kid in a space-suit floating against a starry background and reading a book.

Global warming. The ever-present threat of nuclear destruction. AIDS. African famine. The Drug War. The ozone holes over the poles. Ocean pollution. Air pollution. The coming energy crisis. Growing world-wide unemployment. The economic collapse of the Soviet Union and Eastern Europe. The coming economic collapse of the United States. Religious fanaticism. The rebirth of chauvinistic nationalism.

Are these the last days? Is this the eve of destruction? Are we witnessing the beginning of the end of modern civilization? Of the human race? Of the planetary ecosphere itself?

The exploration of space. Life extension. Genetic engineering. Microchips. The rebirth of democracy in the Soviet Union and Eastern Europe. Solar power. The Green Revolution. Monoclonal antibody cures for cancers. 1992. The computer revolution.

Is this the dawn of a great new Golden Age?

From a time-bound present-day perspective, it may seem as if the world faces a disconnected series of problems, disasters, crises, failures of systems, breakdowns in the processes of civilized life, side-by-side with the random explosion of a Pandora's box of scientific and technological powers.

But from another perspective, a science fictional perspective, the new potentials for a Golden Age and the disasters, looming and immanent, may both be seen as the consequences of our technological evolution, as aspects of the same global phenomenon, not merely the greatest evolutionary crisis ever to confront our species, but the greatest crisis our species will ever confront.

What I have come to call the Transformation Crisis.

Item: energy. Had we not developed a technological civilization dependent on the massive burning of fossil fuels, we would not have created the greenhouse effect presently threatening our planetary biosphere. But the world's present population would not be economically supportable either.

Item: nuclear power. Had we not unlocked the secrets of the atom, we would have no worries about destroying civilization, our species, or the ecosphere itself via nuclear war. But we would have no viable energy source to replace the burning of our dwindling reserves of fossil fuels.

Item: easy international and intercontinental mass transportation. Without it, we would not have our present sophisticated global civilization. But we wouldn't have world-wide epidemics like influenza and AIDs either.

Item: growing world-wide unemployment. Thanks to modern manufacturing and agricultural technology, a small percentage of the world's population is now capable of producing enough food and manufactured goods for everyone, surely a great boon for the species. But what happens to the vast numbers of people thereby robbed of productive employment?

Item: instantaneous electronic global communication. Surely a positive force for world-wide intellectual evolution. Surely a powerful tool for unscrupulous demagogues too. And a force which tends to diminish linguistic and cultural diversity.

Item: advances in medical science. Organ transplants. Impending cures for cancers. Sophisticated diagnostic technology. Life extension. Who doesn't want a longer, healthier life? But the more powerful

and sophisticated our medical technology gets, the more expensive diagnosis and treatment becomes. Lives are now being saved at the costs of hundreds of thousands of dollars. Medical treatments already exist that are simply not affordable for all who need them, and the gap between what is doable and what is affordable will only increase.

Item: genetic engineering. Soon enough, humans will be able to tailor their own offspring, redefine the biological nature of the species itself. What will we turn ourselves into? Who decides? On what basis?

Item: drugs. Humans have had the ability to chemically alter their own consciousness at least since early man fermented grain into beer. Now, however, humans everywhere have at their disposal scores of drugs from other cultures, and labs, legitimate and otherwise, create new ones every day. Soon enough, drug designers will be able to create molecules tailored to produce almost any mental state. Some of these will cure mental illness, enhance creativity, produce harmless pleasure, bolster memory, even increase intelligence. Others, like crack, heroin, STP, and worse things coming, will have dire effects indeed.

Item: sex and gender. Contraceptive technology has divorced sexual pleasure from reproductive consequences. Surely such enhanced freedom of choice is a positive thing. It has led not only directly to the so-called Sexual Revolution, but also to the liberation of women from their ancient existence as reproductive chattel, from inherent economic inequality, from constricted social, political, and intellectual roles.

But it has also removed the biological basis for cultural structures older than the species itself, down to the family unit, without reprogramming biological hardwiring or genetic software. Leaving the present confusion and chaos in which our modern moral and philosophical imperatives in this area are presently in conflict with our evolved animal natures.

One could go on indefinitely. We are perhaps halfway through an immense process of transformation, a process that began long before we even knew it was occurring, and that will probably continue well into the 21st century.

If we don't destroy ourselves in the process first. There are no guarantees, after all.

That's why what we are experiencing is a Transformation Crisis.

The two questions I am most frequently asked are:

Where do you get your ideas?

Why do you write science fiction?

The answer to the first question should be self-evident. I get my ideas from the same place as every other writer—from what is going on all around me.

The answer to the second question is the nature of what is going on all around me. For it seems to me that only science fiction can provide any sort of unified perspective on the Transformation Crisis which our species is presently attempting to negotiate. Indeed, only science fiction seems to be even dimly aware that such a thing exists.

This is not to say that I chose to write science fiction at the beginning of my literary career because I understood then that we were passing through this Transformation Crisis and that science fiction was the only literary mode capable of exploring its ramifications.

All I knew then was that I had been reading science fiction since about the age of eleven, and that while I read many other things too that I found worthwhile, indeed many things that were more elegantly written, more deeply realized, better literature, certainly, in a conventional sense, than most science fiction, I kept returning to science fiction nonetheless, that it was somehow central to my intellectual life.

Only after writing about a dozen science fiction novels and scores of stories, after reading hundreds, probably thousands, more, and after observing twenty years of history unfolding at the same time, did I begin to understand why.

Only in the process of writing volumes of literary criticism on the subject, did I come to understand that science fiction writers have not chosen the Transformation Crisis as an underlying central theme because it is natural material for science fiction, but that such a Transformation Crisis, by its very nature, must generate a literature like science fiction.

The universe, so science now tells us, exploded into being perhaps twenty billion years ago from a single point of quantum flux, and it has been expanding, cooling, and growing more complex ever since.

Quarks condensed into elementary particles, particles clumped into hydrogen atoms, hydrogen atoms condensed into galaxies of first-generation stars. Fusion processes produced the heavier elements in the cores of these first-generation stars, the stars went through their life-cycles, and exploded into novas, enriching the interstellar medium with elements and compounds.

Proto-stellar nebulas formed out of this material, condensed into second-generation stars, many of these apparently attended by planets, gaseous and solid.

One of these planets was the Earth. Outgassings from the interior and cometary bombardment gave it oceans and an early atmosphere. Complex carbon molecules raining down from space turned the oceans into a kind of nutrient soup. The chemical nature of carbon atoms caused these molecules to link together in chains of every-increasing length and complexity.

Eventually, molecules evolved that were able to organize duplicates of themselves out of the raw materials of the nutrient soup—RNA, DNA, the first simple viruses, the birth of life. Cosmic ray bombardment and random accidents caused variations in some of these copies. Those that were better adapted to duplication and survival increased their numbers at the statistical expense of the others. Life began to evolve.

Viral cores evolved protective envelopes of increasing complexity, became cells. The chlorophyll molecule evolved within some of them, enabling them to use the energy of the sun directly to turn simpler compounds, mainly carbon dioxide, into more of themselves—the first single-celled plants.

As they spread and flourished, they replaced much of the carbon dioxide in the atmosphere with free oxygen, and for the first time, life changed the planetary ecosphere, entered into a two-way feedback relationship with its environment.

The pace of evolution quickened. Predatory microbes evolved to graze off the simple plants. Colonial organisms. Multicellular organisms with reproductive organs, then sexual reproduction, which increased variation, and sped up the pace of evolution yet again. Primitive nervous systems evolved to coordinate activity. Spinal chords with neural nodes evolving towards central brains.

Vertebrates. Fishes that crawled up on the shore, evolved into air-breathing amphibians, reptiles, birds, mammals. And all the while, driven by the increasing complexity of the organisms, the greater environmental challenge of the dry land, the need to prey and avoid being preyed upon, nervous systems and brains evolved greater and greater complexity until....

Primates evolved the habit of picking up sticks and stones and using them as weapons, later as tools, requiring the evolution of still larger and more complex brains to coordinate these activities. Perhaps at the same time, they began hunting in coordinated groups, using sounds and gestures with differentiated meanings.

At some point in the complication of this process, these became language, a means of conveying information from one animal to another, a kind of primitive media, an abstract space, a mental processing interval between stimulus and response, input and output, which is to say life began to think.

Consciousness had evolved. And once it had, cultural evolution began, evolving much faster than anything in the natural ecosphere.

Language. Tools. Religion. Agriculture. Political systems. Villages. Towns. Nations. Science. Art. Literature.

Printing presses. The steam engine. Mass production. The telegraph. Radio. The airplane.

The atomic bomb.

Sooner or later, any sentient species possessed of evolving science and technology is going to get its hands on the power of the atom, and when it does, it cannot help but enter its full-blown Transformation Crisis, as our species did in 1945.

In a sense, the explosion of the first atomic bombs initiated our Transformation Crisis, that is, if one must put a date on it, 1945 is surely it. But in a deeper sense, the Transformation Crisis really began with the evolution of consciousness itself, when the blind evolutionary process that began with the Big Bang produced a level of material complexity sufficient to create an organism capable of taking evolution itself into its own hands.

In that sense, the human species had transcended the "natural" evolutionary process as soon as it picked up the first tool and started talking about what to do with it next. From then on, cultural and technological evolution began to move much faster than anything in so-called "nature," transforming the ecosphere, the land, the atmosphere, the planet, indeed humanity itself, with ever-increasing speed.

Finally, inevitably, in 1945, consciousness reached for mastery over matter and energy itself.

Now, with the secrets of subatomic forces themselves in our hot little hands, humans held both the potential to produce

greater quantities of energy than their planet had ever seen, and the power to destroy the biosphere itself.

For better or worse, the lunatics were now fully in charge of the asylum.

Since then, human transcendence of the natural evolutionary process has proceeded apace. Now we have the ability to spread out from our planet into the universe. Now we have become, at least potentially, Shiva, Breaker of Worlds. Now we are on the threshold of controlling and shaping our own biological natures through genetic engineering. Now, via chemicals, electronics, sophisticated mental processing techniques, we are able to tailor consciousness itself to suit our own whims. And now, only now, have we evolved to full awareness of the true extent of our powers over the Earth and everything upon it, including the very nature of our own selves. Only now, have we truly begun to ponder the awesome responsibilities that we have unwittingly seized along with such powers.

Oh yes, this is frightening to contemplate! Science and technology, proceeding from the unstated assumption that what can be done should be done, has placed awesome powers in human hands, without really pausing to ponder whether the minds behind those hands have really evolved the moral and philosophical maturity to wield them wisely.

Neo-Luddites, scientifically naive ecological activists, certain religious fanatics, and other such retrogressive wishful thinkers contemplating this prospect with understandable dread, may declare that our Faustian hubris has caused us to usurp demonic and/or godlike powers not meant for the hands of imperfect creatures like ourselves, that we have committed unnatural acts, that our only possible salvation lies in somehow returning to a more technologically primitive state.

But science tells us that nothing in the evolutionary chain from the Big Bang to the atomic bomb, space travel, genetic engineering, the Transformation Crisis we find ourselves in today, is "unnatural".

Matter, the stars, planets, evolved out of the interplay of universal physical laws, and so too, life. So too the evolutionary path from self-replicating viruses to self-aware conscious organisms, and in all probability the path from first conscious thought to the technological transcendence of natural evolution.

And science fiction, building upon scientific knowledge, makes a leap of scientific faith that gives us hope.

There are hundreds of millions of stars in a galaxy, hundreds of millions of galaxies in the universe, millions upon millions of planets capable of generating life, billions of years for these evolutionary processes to produce conscious beings like ourselves, so surely, in the long history of the universe, millions of intelligent species must have passed into the Transformation Crisis period we are perhaps halfway through now.

So many that anything that can happen has happened. Untold species have destroyed themselves with nuclear weapons or worse things waiting. Untold others have terminally polluted their atmospheres or mutated themselves via genetic engineering into non-viable monstrosities or exhausted limited energy resources and sunk back into pre-civilized barbarism.

But untold other civilizations out there must have successfully negotiated their Transformation Crisis. Put war behind them before it was too late. Learned responsible stewardship of their planetary biospheres. Developed ecologically-benign energy sources. Become the self-aware masters of their own consciousness before tampering too far with their own genes. Evolved an ethical and spiritual maturity to match their mighty powers over matter and energy. Mastered themselves. Matured into stable civilizations capable of surviving millions of years of their own history.

Become what we must become in order to grow up. If we are to survive to grow up at all.

And I believe that it is not really going to far to assume that those species which survive their Transformation Crises must develop a form of science fiction, or something at least functionally similar.

Such an intellectual evolution would seem to be necessary to the successful emergence of a stable, survivable, technological civilization.

For just as tool use and language must lead to the evolution of conscious awareness on an individual level, the transcendence of the natural evolutionary process via science and technology must lead to cultural self-awareness, to the evolution of some artform that allows the species in question to contemplate the psychological, philosophical, and moral consequences and responsibilities of such transcendent powers.

If no such means of cultural self-contemplation evolves to fill the intellectual ecological niche occupied in human society, however imperfectly, by science fiction, such a sentient species cannot survive its own cultural myopia, its own moral blindness. In that sense, the evolution of something like science fiction is a universal necessity, a consequence of the development of consciousness itself.

Indeed it is not such a good sign that our own species tends to regard science fiction as something peripheral to its cultural life, nor that so much of our science fiction is mere action-adventure escapism.

On our planet, science fiction chanced to evolve out of pulp adventure literature, so-called popular literature, rather than as the cutting edge of the intellectual mainstream, and the unfortunate results have been a human science fiction that does not generally attract the best and the brightest at the height of their intellectual powers, and, worse still, an intellectual mainstream that for the most part lacks the tools and the will to deal with matters of central cultural concern, indeed an intellectual mainstream not even really consciously aware of what these central cultural concerns are.

As a result, we find ourselves staggering blindly through a mature Transformation Crisis with our political, economic, and intellectual leadership largely unaware of what is really happening.

But on the other hand, this conference is concerned with the stake in the 21st century of the youth of today, with how literature impacts upon the consciousness and culture of the children who will become the adults of the next century, with how educators may use literature to help mold this next generation.

The stakes are indeed high. They are ultimate—the survival of the species itself. And adults do indeed have a responsibility for the education of youth.

But wise adults of any species should not be above learning from youth too. For while mature minds have the benefit of experience and learning, it is the young whose evolving minds are most directly influenced by the cutting edge of the evolutionary forces, the young whose consciousnesses are being formed by these processes, the young who will be constrained to inhabit not only the future that we adults are making for them, but the future they are in the process of making for themselves.

Indeed, thanks in large part to revolutionary technology, and the natural greater openness of minds not fully formed to novelty and change, for the last quarter of a century, the young have done as much to shape adult culture as adults have done to shape the culture of youth.

The American Civil Rights movement, the transformation of the French 5th Republic from a personal vehicle for Charles De Gaulle into what it is today, the sexual revolution, the anti-war movement, the Prague Spring, rock and roll, the computer revolution, and much, much more, arose not from the intellectual culture of mature adult power-structures, but from the self-made culture of youth.

This, it should be pointed out, is not how it has always been. This is very much a post-1945 phenomenon, an evolutionary response, perhaps, to the Transformation Crisis itself, an adaptation by our species to the increasing pace of change.

Perhaps, therefore, this conference would have been better served by the inclusion of representatives of youth in its deliberative process. Dare I suggest that young people may understand a few things about their own stake in the 21st Century that we mature sages may not? Dare I suggest that they are likely to dominate the shaping of their own destiny no matter what we say and do?

Certainly, educators and literary critics have something to learn from what the young choose to read when left to their own devices.

Which, for a generation and more, has not generally been the great fiction of the past, or the retrospective analysis of history, but, despite its literary flaws, its own gawky adolescent growing pains, its flamboyant excesses, its lack of intellectual respectability, that literature which addresses not the reality we are emerging from, but the realities we are moving toward—science fiction.

If you look around—at books, magazines, comics, television, music videos, films, advertising, the very games children now play—you will realize that, among the young, at least, the transformation has long since taken place. The culture of youth has long since absorbed the transformational worldview of science fiction.

And like it or not, the young are creating our future at least as much as we are creating theirs.

Perhaps this too is an evolutionary inevitable.

Perhaps, in the successful negotiation of any species' Transformation Crisis, this is not the beginning of the end, but the end of the beginning.■

ONE THOUSAND STORIES

A Gallimaufry Review of (American) Science Fiction in the Shorter Lengths in 1990 Involving the Fear of Predators, Self-Editing Alternate Time Loops, Hot Tips, Swell Writers, Perceived Trends, the Death of Memory, and the Fate of Scheherazade

by Michael Swanwick

I read one thousand science fiction stories last year.

The total was slightly more if you count the occasional reprint I read for fun, and considerably less if you strictly exclude horror and fantasy. I didn't make that distinction. I was on the Nebula Short Fiction Jury, and our mandate was to read as widely as possible, in search of the wonderful story (up to one per category) that was either too weird or too obscurely placed to be voted onto the final Nebula ballot, so that we might add it there. We read as far and wide and thoroughly as five human beings could, displaying, I like to think, all the patience and forbearance of Shahriar himself. With the exception of extraAmerican (British in particular) SF, which was not eligible, we came pretty close to reading it all.

But I'm not here to discuss the Nebula or its Juries, nor to rank and sort the year's fiction into bins by weight, color and quality. No. I want only to present a gallimaufry of observation, perceived trends, odd developments, and hot tips, with perhaps a moment of despair thrown in to spice the stew. Then, at the very end, as a sop to the competitive among us, I'll read out the bottom line and decide whether Scheherazade (who, face it, *can* be a tiresome bit of baggage at times) deserves to live or die.

Let's begin.

The most strikingly apt image of the year passed unremarked and all but unnoticed. It was a photo in *Locus*, a casual shot of Ellen Datlow and Gardner Dozois leaning over a table, deep in conspiratorial conversation. Here was a moment to freeze the blood of every jackal in the editorial jungle. The two top carnivores in science fiction were sitting together, amiably dividing up the kill. One could almost hear Ellen explaining that she insisted on the choicest bits and Gardner gruffly agreeing to settle for the haunch and heart. Meanwhile, out in the bush, the lesser meat-eaters would just have to settle for whatever remained.

This was the one inescapable truth for anyone trying to compete for stories: Between them, *Omni* and *Asimov's* had the money and the prestige to nab anything they wanted, and could reasonably expect to get first look at everything. Worse, both magazines had aggressive editors who did not settle for the best of what came over the transom, but went out to hunt down new writers and convince them not to send their best efforts elsewhere. One way or another, every editor in the field had to cope with this phenomenon, and as they coped so did their magazines fare.

To look at just three examples:

Weird Tales made the cleverest end-run by publishing, well, "Weird Tales" sorts of stories, a trademark mix of horror and dark fantasy that allowed it to hunt well outside the range of *Asimov's*, and with only the occasional wildebeest lost to *Omni*. George Scithers and crew also made each issue a "theme" issue, emphasizing a specific author (Chet Williamson, Nancy Springer, David Schow, Jonathan Carroll). This was apparently done with an eye to the collector's market, but was also a shrewd move artistically, giving "name" authors an incentive to hold out their best in exchange for prestige and recognition.

Aboriginal SF and *Pulphouse* both emphasized new writers and short lengths, shoring up reader loyalty with chatty introductions and other editorial devices emphasizing a personal bond with the subscribers. There has (quite rightly) been a lot of local comment on the boundless energy of Kristine Kathryn Rusch (who has just added editorship of *F&SF* to her duties) and the rest of the Pulphouse gang (who are currently converting their quarterly hardback anthology to a weekly magazine). But it would be wrong to overlook the heroic labors of Charles Ryan and company who have taken an underfinanced, not to say underdog publication (started, if you can remember back that far, at a time when several other genre magazines had just publicly crashed and burned) and not only kept it alive against serious odds, but coaxed it into growing and even thriving. These people deserve a medal.

Standing in a candlelight peace vigil at the Quaker meetinghouse where my son attends school, the day before what looked to be yet another futile and endless war began, it was hard to remember that Molly Gloss's "Personal Silence" (*Asimov's*, January) was not only written but published at a time when Saddam Hussein was a media nonentity. The story's hero—and it is a rare genre protagonist that deserves that tag—has, as a form of protest, taken on himself the task of walking to the end of a future world war. It's a quixotic task; doubly so because with the entire world at war, there is literally no end to his pilgrimage. A quiet and moving paean to individual moral action in the face of overwhelming evil.

I encountered "disk-top" publishing for the first time this year in the form of BPLAN Virtuals' *Science Fantasy Reader #1*, a short anthology existing only on floppy disk.

Contrary to expectations, the text was easy to read and manipulate, and it's not at all hard to imagine, a few technological improvements down the road, these things making inroads into the hardtext market. The stories themselves, alas, were not the authors' best— those still go to publications with money and large readerships— but it was a surprisingly pleasant experience anyway. It has potential.

Jonathan Carroll was probably the year's most-published author in short fiction, with two stories appearing in *Omni*, one in Kathryn Cramer's *Walls of Fear*, another four in a special issue of *Weird Tales*, and in England a hardcover short novella from Legend. Carroll's main strength is in his descriptive powers. Nobody conveys the pleasures of small heavy doughnuts as well as he does. His Achilles' heel is his endings, which tend to be rushed, abrupt, unconvincing. "The Art of Falling Down" (*Walls of Fear*), however, in which a young boy in Eisenhower's America meets a dying gay photographer and misses the chance to learn a major mystery when he encounters a minor one, is a small masterpiece.

The new **Universe 1** was the most pleasant resurrection of the year. Karen Haber and Robert Silverberg, by bringing new energy to the late Terry Carr's series, have once again proved the validity of the unspecialized original anthology. I was most impressed by Ursula K. Le Guin's "The Shobies' Story," in which she managed a feat that even Eisenstein's **Battleship Potemkin** could not pull off: a satisfying plot with a collective hero. She also succeeded in portraying a future society wired wholly differently from our own and making it sound not only desirable but plausibly workable as well. Not far behind it, Bruce Sterling's "The Shores of Bohemia" mixed the author's signature obsessions—rebellious and affected youth, the Net, technological transcendence—into a witty and original concoction, lightly spiced with touches of Jungian imagery.

Original non-theme anthologies have been moribund in recent years. I can only hope the new "bug-crusher" format is a success.

Graham Green once wrote that Thailand was the only place in the world where ignorance of language was an advantage— you don't want to know what the locals are saying about you. In "Lottery Night" (*Asimov's*, April) S. P. Somtow spills the beans about Thai humor with a wild and scatologically funny, perhaps more scatological than you like, fantasy set in present-day Bangkok. A welcome relief from generic fantasy stories.

Alien Sex demonstrated the power a theme anthology can have if the theme is apt, and garnered enormous attention throughout the field. The inevitably stronger half of the anthology was made up of reprinted contemporary classics. Of the original stories I was most impressed by K. W. Jeter's "The First Time," which ably conveys the nastiness and corruption which can accompany sexual initiation, Richard Christian Matheson's short but sly "Arousal" and Scott Baker's "The Jamestown Incubus." Having read some of Baker's novels, I left this for last, and it started out every bit as negatively as I expected. A dry, twisted professorial type suddenly develops the power to enter into the dreams of whatever women he chooses and have wild sex with them there. The delightful surprise of the story was the (I believe perfectly legitimate) notion that having limitless sex would then cure the professor of his crabbed and stunted personality.

Alternate history stories, a rarity not long ago, are everywhere these days; 1990's peculiar contribution to the subgenre was the alternate history in which, after a thorough reshuffling of the causative deck, the ending leaves history essentially unchanged. Two examples: In Mike Resnick's "Bully!" (Axolotl Press) Theodore Roosevelt attempts to impose an American-style democracy on Kenya and after a great deal of effort, including a wonderful sequence in which TR conquers the entire colony aided only by a handful of elephant poachers, discovers his scheme was doomed from the start. In Susan Shwartz's "Loose Cannon" (**What Might Have Been, Vol. 2**), Lawrence of Arabian fame survives his famous accident and is recruited by Winston Churchill to "turn" Rommel, a man whom history records did not need Allied intervention to lose faith in his Nazi masters. In both works, the unchanged state of history is exactly the point, though to different artistic purpose. And lest there be any doubt, both authors have proved themselves thoroughly enough that we need not suspect any failure of research on their parts. Obviously, steamship time.

A less-pleasant development was the proliferation of stories in which child abuse served as the motive engine— literally dozens of them. Some did manage to successfully serve their intended artistic purpose, but they were drowned out by the many in which it served as a cheap jumpstart for the plot or even cheaper emotional "kick." Sad.

What we call hard SF, stories based on logical extrapolations of real science (as opposed to good fun but totally fictitious means of FTL travel, say), was an exceedingly rare bird. This made Robert R. Chase's "Transit of Betelguese" (*Analog*, May) particularly welcome for its careful research into and presentation of the workings of novae. One of the best scientists-poking-at-a-problem stories around was "Before I Wake," by Kim Stanley Robinson (*Asimov's*, April) which might not be recognized for its "hard" qualities because (a) the scientists fail, and (b) it is written in a subjective prose conveying the experience of continually drifting in and out of a stuporlike fugue state. Intriguingly, Ted Chiang's "Tower of Babylon" (*Omni*, November) employed the traditional hard SF tools to an unabashed fantasy story, with a team of pious Bronze Agers on a months-long climb up the famous tower. The implications of a structure reaching up to the top of the sky are worked out in fastidious if impossible logical detail.

For big, brash ideas, honors had to go to the literary lefties— the serious, artistically ambitious guys and gals. "Mr. Boy" by James Patrick Kelly (*Asimov's*, June) features a high-school kid "twanked" into the form of a stenonychosaurus, mall franchise families, and virtual environment parties. The eponymous hero lives inside his mother, who has had herself reshaped into a three-quarter scale replica of the Statue of Liberty. "Fool to Believe" by Pat Cadigan (*Asimov's*, February) is set in her *Mindplayers* universe, its hero a Brain Police agent who goes *way* undercover in a world populated by neurosis peddlers, recreational psychotics, and mental freaks of all sorts. My favorite detail, though was a small one: when her heroine sits down on the curb, she must first dump money in a meter. In "Over Flat Mountain" by Terry Bisson (*Omni*, June), current geological theory is disproved when the Appalachians unwrinkle into a single, very big mountain extending entirely out of the atmosphere. His hero drives a pressurize truck when he's not fighting life-and-death battles with landlobsters. "The All-Consuming" by Lucius Shepard and Robert Frazier (published in the July *Playboy* as a Shepard solo) includes a Japanese businessman who travels about the world eating things— one of Elvis' suits, an entire McDonald's. There was nothing half so wild happening in the pulp end of the field.

Thomas Ligotti had two new stories out this year. But the big news was the publication of his first collection **Songs of a Dead Dreamer**, which came as a revelation to those of us who had not been keeping up with the small press, where all his prior work first appeared. Bizarre, unique, almost indescribable—a Ligotti story is unmistakable, in the tradition of writers like Edgar Allen Poe and H. P. Lovecraft. Which is to say totally unlike anything else you've ever seen. People are going to be reading Ligotti for a long time.

There was more happening in fanzines, semiprozines and small press fiction this year than could be summarized in an article ten times the length of this one. So I won't even try. Save to mention that the relatively new zine *Strange Plasma* somehow managed to snag stories by the likes of Gene Wolfe, Paul Park and R. A. Lafferty, a feat that must make editor Steve Pasechnick the envy of all his compeers.

My favorite Lafferty, however, was "Episodes of the Argo," published in a chapbook of the same name from United Mythologies, an impossible-to-summarize extravagance with cameo appearances by many of the author's favorite creations. Apparently there is no aboveground market for work of this caliber, and Lafferty is being kept in print only by the concerted efforts of a constellation of small press enterprises. A sad commentary on us all, that we cannot support one of our best. R. A. Lafferty is more than unique—if there were no Lafferty, we would not have the imagination to invent him.

Because there are so few publishing slots for them, novellas have always been something of a financial risk to genre writers, and as a result, they have been written for the most part by our more accomplished authors, writers confident of their ability to go up against the best. This year the cycle came full circle. In response to the overall high quality of novellas produced as a result of these forces, new markets for them have

opened up. Novellas came out as independent books from Ziesing Books, Axolotl and, most handsome of all, a series of hardcovers from Legend Books. Imported copies of these latter (by Carroll, Bear, Shepard and Campbell) were hot items in the huckster rooms, selling briskly at prices of up to thirty-five dollars a pop. Mercifully, for those of us who read for pleasure rather than investment, St. Martin's Press has picked up the line and expects to have American hardcovers available in time for Chicon.

Stories have started to appear in response to the liberalization of the USSR and the breakup of the Soviet empire. Ian Watson's "Stalin's Teardrops" (*Weird Tales*, Winter 1990/91) is the best of the lot, a literarily sophisticated triptych in which one protagonist, after a lifetime of falsifying maps, must explain to the new regime that not only have they totally lost track of the reality underlying their forgeries, but that the unmapped areas of the Soviet Union have taken on a magical life of their own, and will fight to defend that life. This story took on added significance for me recently when I decided to set a story in Sevastopol and discovered that no maps of that city are available anywhere.

Honors for most outrageous title of the year did not go to early front-running anthology *The Ghost of Carmen Miranda Is Haunting Space Station Three*, but to Dafydd ab Hugh's "The Coon Rolled Down and Ruptured His Larinks, A Squeezed Novel by Mr. Skunk" (*Asimov's*, August) a story which manages the near-impossible by living up to its title and then some. It's a story that starts out looking like a whimsical SF adventure and then, after getting past the reader's defenses, turns first cold and then wistfully sad.

Effective satire is always rare. But "The 21st of June" by Thomas R. Disch (*Voice Literary Supplement* #85, May) turns both sides of the flag-burning issue on their heads with a wit and intelligence so convincing I no longer have the faintest idea what my own position on this issue might be.

Listing the year's Promising New Writers is a hazardous game, if a necessary one, and I enter into it with trepidation. If I chance to overlook the next Alfred Bester, or praise a forty-year veteran as a green newcomer, I beg you to remember that my intentions were good.

Save for a chance conversation with Susanna Sturgis, who edited **The Women Who Walk Through Fire**, a collection of feminist science fiction, I would never have realized that L. Timmel Duchamp was a new writer. Her overtly political "The Forbidden Words of Margaret A." (also published in *Pulphouse* 8) was so subtle, sure and accomplished a work, I naturally assumed she was an established name from the outside world dabbling in science fiction. When I discovered this was her first story, my jaw dropped. I was also greatly impressed by "The Dream of the Turtle King" (*Pulphouse* 6), Lisa R. Cohen's witty, deliberately anachronistic retelling of the Pied Piper story, "The Printer of Island Castle" by Mario Milosevic (*Space & Time* #77), and "The Allah Stairs" by Jamil Nasir (**Tales of the Unanticipated**). Sarah Smith's "Three Boston Artists" was my favorite story from *Aboriginal SF* this year (July/August), though she had competition from Gregor Hartmann's zany "A Month of Sundays" (March/April). Jonathan Lethem put more into his short-short "A Mirror for Heaven" (*Marion Zimmer Bradley's Fantasy Magazine* 9) than I would have thought possible for that length. Patricia Anthony wrote movingly about a robot ant teleoperator in "For No Reason" (*Asimov's*, September). And Greg Egan produced an eerie and inexplicable fable and police procedural about wealth and sphinxes in "The Caress" (*Asimov's*, January).

The single most impressive debut of the season had to be that of Ian R. MacLeod, who hit the ground running with "1/72nd Scale" (*Weird Tales*, Fall), a dark tale of oppression and redemption livened by some surprising imagery and a fine way with language, and "Green" (*Asimov's*, Mid-December), in which gardeners must cope not only with aphids, slugs and mealybugs, but fairies as well. MacLeod also published three stories in *Interzone*, and has a raft more out and forthcoming in the American magazines in 1991.

However, an even more astounding debut in short fiction was made by previously published author— four novels— Terry Bisson, who in addition to the earlier mentioned "Over the Flat Mountain" published the delicately witty and genuinely funny "The Two Janets" (*Asimov's*, November) and "Bears Discover Fire" (*Asimov's*, July), one of the best stories of the year within or without the genre. If I could commend but one author to your attention this year, it would be Terry Bisson.

The old, established hands were not nearly so active in short fiction as might be wished. Avram Davidson continued to produce exemplary work, most notably "Limekiller at Large" (*Asimov's*, June), a Jack Limekiller story it goes without saying, and yet another excellent one. Robert Silverberg proved as reliable as ever, particularly in "Hot Sky" (*Playboy*, February), a cautionary tale that sums up the human and environmental consequences of current policies in a taut, moving human story. Barry Malzberg published a wonderfully funny—to a writer anyway—vignette in which Ernest Hemingway is sweltering in Paris, trying to break into John W. Campbell's *Astounding*. ("Almost two decades out of the country and still not a word in print while kids like Asimov . . . seemed to have the formula.") "Another Goddamned Showboat" was published in **What Might Have Been**, Vol. 2. Kate Wilhelm proved she still has the stuff in "And the Angels Sing" (*Omni*, May), Gene Wolfe tied Gothic and genre conventions in a knot in "The Haunted Boardinghouse" (**Walls of Fear**) and updated the backwoods horror story in "Lord of the Land" (**Lovecraft's Legacy**), and there were others. But not enough.

No discussion of the year would be complete without mention of what was *not* seen. As mentioned above, hard science fiction was scarce as scarce. Indeed, the traditional science fiction tropes (problem-solving, spaceships, alien environments, and so on) were all pretty thin on the ground. Even more distressing, the range of storytelling technique was— with some few exceptions— very narrow, trending toward the naturalistic and even naive.

Several times I've heard Barry Malzberg hold forth on the models he and his predecessors had studied and brought to their own art. Writers like Guy de Maupassant, Bret Harte, and Anton Chekov are seldom even read by new SF writers anymore, and I suppose that's nothing to be surprised at; literary reputations are constantly being churned over and plowed under as generational tastes change. But the techniques lifted from such sources for quick narrative exposition and the ilk are just as rarely seen today as a really-and-truly hard science story. It's a revelation to go back to, say, Fritz Leiber's classic "Coming Attraction" and realize that he brought it in well under five thousand words, making it roughly the length of this very essay. There are few writers my age or younger with the craft to pack so much into even twice the length.

This has been a long time building. For years our elders have been warning us of the consequences of the end of the backlist. So much of our field's artistic cohesion was based on the fact that at any given time most of our best and finest work was available to anyone who had the interest and a couple of bucks to spend. No more.

Over the past year, I've had a number of depressing encounters with writers of my own generation—depressing not because they were willfully or smugly ignorant, but for the involuntary gaps in their reading. "I'm familiar with the name of course, but—" a shrug. Or, "Yes, but who has the time to scour the used-bookstores for his stuff?" Steven Popkes, exultant at having scored a copy of Avram Davidson's **Peregrine Secundus**, was speechless with envy that I owned the **Primus** as well, with its wonderfully vulgar one-page version of the Odyssey.

The chickens have come home to roost. We are paying the freight for the disappearance of the backlist, and not just in the form of vanished royalties for the authors. The coin with which this particular Teind of Hell must be paid is dearer than silver, more precious than gold.

It is the death of memory.

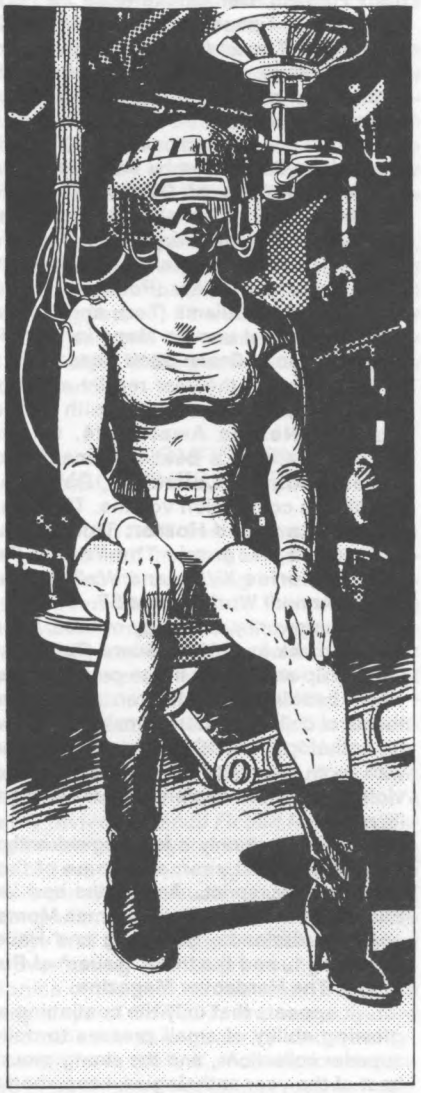
But what the heck. Let's not dwell on our losses. At the beginning of this essay, I promised to pass judgment on the storytelling skills of Scheherazade. Now the time has come. You'll note no shortage of worthy work in the listing above, and I could easily have mentioned more by Carol Emshwiller, Tom Purdom, John Kessel and Gardner Dozois among others. In fact, of the thousand-some stories I read, devoured or (mostly) doggedly plowed through this year, I can honestly say I either enjoyed or admired about one hundred.

Here, then, is an independent and objective corroboration of Sturgeon's famous Law. To my surprise, the 90:10 ratio turns out not to be metaphoric, but a fairly accurate objective accounting. Enough, then, to spare the storyteller's life. For all the crap she's fed us, there's still that ten percent.

And that ten percent is good enough for anybody.

As a sacrifice to the Goddess, I have omitted mention of several of the year's best stories. Filling in the gaps is left as an exercise for the reader.■

1990: The Year in Speculative Fiction



Opinions Compiled by Doug Fratz and Anthony Trull

The following represents a compilation of the opinions and observations or more than a dozen QUANTUM *editorial staff members and SF critics and reviewers who responded to our request for input on the speculative fiction field in the year 1990. Those responding to our request included Dan Crawford, Don D'Ammassa, E. R. Stewart, Greg Costikyan, Jonathan Post, Gene DeWeese, Jon M. Gilbertson, Jeremiah P. Reilly, Lee Smith, Nancy Hayes, Steven Sawicki, and, of course, Doug Fratz and Tony Trull, who assume full responsibility for the final opinions and observations chosen for inclusion.*

NOVELS

An overwhelming trend continued to build and diversify in 1990 in science fiction, fantasy and horror literature: the "series" book. This form of publishing has now mutated into numerous forms, beyond traditional Tolkien-clone fantasy trilogies and never-ending science fantasy adventures that stretch modest plots and storylines into two, three, or even more, books. Now we also have various forms of collaborations (often by Drake and almost everyone else), the series where an author (like McCaffrey) shares space with a number of co-authors, constructs (like **Black Trillium**) where authors combine to produce a single collaborative piece and then break off to each write their own follow ups, and the plethora of shared worlds. Prime among the candidates for a "Doing It for Spare Cash" award were **Isaac Asimov's Robot City**, **Arthur C. Clarke's Venus Prime**, and **Philip Jose Farmer's The Dungeon**. These books are printed proof that patronage can be a good and bad thing. Good, because struggling authors get exposure; bad, because struggling authors don't have to come up with their own ideas.

And series that are supposedly science fiction seem to be becoming less like SF and more like simply fantasy sagas with SF trappings, concerned with worlds and peoples that have no discernible connection to Earth, maybe not even to our universe. We see fewer and fewer "real" SF series, *i.e.*, series that, while they involve invented worlds and peoples, have at least *some* link with Earth and the present, no matter how tenuous.

It is apparent that much of this is publisher driven. It clearly takes up shelf space which could have gone to "cutting edge" fiction or to breaking in new authors.

Two veteran authors last year made novels out of novelettes with the help of other, if younger, established names. One wonders if Gregory Benford and Robert Silverberg weren't just going on a lark when they wrote **Beyond the Fall of Night** and **Nightfall**, respectively, with Clarke and Asimov. On the bright side, 1990 did see the apparent end of Jack McKinney's novelization of *Robotech*, with book number 18.

On the positive side, many good novels were published in 1990, although no one is considering 1990 a high-water mark. Dan Simmons continued to add to his newly-established reputation with **The Fall of Hyperion**, which is actually the second half of the massive novel he began a year earlier with **Hyperion**, although one of our reviewers felt the novel was "too neat, too structured." (You can't please everyone...) There can be no doubt that Dan Simmons found 1990 quite complaisant, and he had his way with it shamelessly. His SF novel, **Hyperion**, won the Hugo, while his horror novel, **Carrion Comfort**, won both the 1990 Bram Stoker Award and a Locus Award as Best Horror Novel.

Several important hard-SF novels saw print last year. Works by hard-SF veterans include Greg Bear's high-tech mystery/thriller **Queen of Angels**, David Brin's trend-setting novel for the '90s **Earth**, Joe Haldeman's convoluted **The Hemingway Hoax**, and Charles Sheffield's **Summertide** (although it is the first in one of those dreaded series, alas). Among softer SF, most notable was **Pacific Edge**, Kim Stanley Robinson's third novel set in Orange County, California. Possibly the most important novel published in 1990, however, **The Difference Engine** by William Gibson and Bruce Sterling, appeared only in the United Kingdom; U.S. readers had to wait until 1991 for the Bantam edition. Impressive efforts by less established authors included **The Divide** by Robert Charles Wilson, **Clarke County, Space** by Allen Steele, **The Ring of Charon** by Roger McBride Allen. Two of thee more interestingly offbeat novels of 1990 were **Voyage to the Red Planet** by Terry Bisson and **The Hollow Earth** by Rudy Rucker. The only notable first science fiction novel may have been Ernest Hogan's **Cortez on Jupiter**.

Another important event in 1990 was the publishing of Heinlein,s unexpurgated **Stranger in a Strange Land**, which was the genre's equivalent of the recent discovery of the first half of Twain's original manuscript for **Huckleberry Finn**. We can apparently look forward to seeing more of the works of Robert A. Heinlein *just as he wrote them* in the next few years.

There were also a number of disappointments from well-known authors, including Asimov, Anderson, Niven, Clarke and Leiber. Some of these were part of the growing trend to pull out old work and expand it into a novel. Possibly the greatest disappointment in the area of hard SF was **Ghost From the Grand Banks** by Arthur C. Clarke.

In the fantasy genre, some believe that the absolute best novel of the year was **Good Omens** by Terry Pratchett and Neil Gaiman, one of the funniest novels in recent years. **Castleview** by Gene Wolfe is also a strong contender for best fantasy novel in 1990, as is **Stone of Farewell** by Tad Williams, a book in his *Memory, Sorry and Thorn* series, and a solid, well-crafted fantasy that is vivid, substantial, and fresh. Other important fantasy novels included Ursula K. Le Guin's fourth *Earthsea* novel, **Tehanu: The Last Book of Earthsea**, James Morrow's wickedly funny **Only Begotten Daughter**, Ellen Kushner's more traditional genre fantasy tale, **Thomas the Rhymer**, and Alan Brennert's marvelously written **Time and Chance**. A vote for the most daring fantasy goes to *The Last Herald Mage* trilogy by Mercedes Lackey for presenting a gay protagonist without trying to make it into a statement. One of the only truly notable first novels in 1990 in the fantasy genre was Elizabeth Hand's superb **Winterlong**.

In the area of horror (dark fantasy is actually a more appropriate term), novels mentioned as best-of-the-year candidates included **Moon Dance** by S. P. Somtow (whom most of us know as Somtow Sucharitkul), **Tempter** by Nancy A. Collins, **The Cartoonist** by Sean Costello, **The Revelation** by Bentley Little, **Nightlight** by John Cadnum, and **When We Waken the Dead** by John Holt.

There were also several other first novels worth reading: **Blood of the Children** (Bantam) by Alan Rodgers, **Night Prophets** (NAL) by Paul F. Olson and **Nightblood**

(Warner) by T. Chris Martindale. And although the following authors did not have their first novels published in 1990, they are very strong and notable voices in 1990 that may form the core of horror's future: Joe Citro, Rick Hautala, Sean Costella, Matt Costello, Jeffrey Sackett and Gary Devon.

Overall, it was not a strong year for novels, either in terms of veterans or newcomers.

SHORT FICTION

In 1990, fantasy and science fiction was most often printed side-by-side, in the same magazines and anthologies. The best work varied in the speculative content, and there was a remarkable shortage of "traditional" extrapolative science fiction.

The best of works falling into the short-story category were "Shatterwrack at Breaklight" by Terry Dowling (*F&SF*, March), "Bears Discover Fire" by Terry Bisson (*IASFM*, August), and "For No Reason" by Patricia Anthony (*IASFM*, September). Other top-notch short stories included "A Half-Dime Adventure" by Don Webb (*IASFM*, October), "Blunderbore" by Esther M. Friesner (*IASFM*, September), "Captain Coyote's Last Hunt" by Bradley Denton (*IASFM*, March), "Godspeed" by Charles Sheffield (*Analog*, July), "The First Time" by K. W. Jeter (**Alien Sex**), "Dancing Holes" by Joyce Thompson (**Pulphouse 6**), "Life Sentences" by Nina Kiriki Hoffman (**Pulphouse 6**), "Recycled Grandfather" by Vivian Vande Velde (**Pulphouse 6**), "Shore Leave Blacks" by Nancy Etchemendy (*F&SF*, March), "The Murderer Chooses Sterility" by Bradley Denton (**Pulphouse 6**), "We Were Butterflies" by Ray Aldridge (*F&SF*, August), and "White City" by Lewis Shiner (*IASFM*, June).

At the novelette length, the best work last year included "Curious Elation" by Michael Cassutt (*F&SF*, September), "Hollywood Kremlin" by Bruce Sterling (*F&SF*, October), and "In the Upper Cretaceous With the Summerfire Brigade" by Ian Watson (*F&SF*, August).

Other notable novelettes included "Bestseller" by Michael Blumlein (*F&SF*, February), "Personal Silence" by Molly Gloss (*IASFM*, January), "Simulation Six" by Steven Gould (*IASFM*, March), "The Caress" by Greg Egan (*IASFM*, January), "The Death Artist" by Alexander Jablokov (*IASFM*, August), "A Braver Thing" by Charles Sheffield (*IASFM*, February), "The Shores of Bohemia" by Bruce Sterling (**Universe 1**), "The Safe-Deposit Box" by Greg Egan (*IASFM*, September), "The Spiral Dance" by R. Garcia y Robertson (*F&SF*, May), and "Toward Kilimanjaro" by Ian McDonald (*IASFM*, August).

Novellas are often the strongest length for speculative fiction each year, but 1990 was a surprisingly weak year. The two best were probably Kim Stanley Robinson's "A Short, Sharp Shock" (*IASFM*, November; also a Ziesing hardcover) and Joe Haldeman's "The Hemingway Hoax" (*IASFM*, April), which is part of his novel of the same name. Other good novellas of 1990 included "Skull City" by Lucius Shepard (*IASFM*, July), "Bwana" by Mike Resnick (*IASFM*, January), "Fool to Believe" by Pat Cadigan (*IASFM*, February), and "Bones" by Pat Murphy (*IASFM*, May). *Asimov's* continues to get the best of the novellas.

The good news is that there's still more good short fiction published than most can find time to read.

COLLECTIONS/ANTHOLOGIES

Both single-author collections and multi-author anthologies thrived in 1990.

The best of the single-author collections included **The Brains of Rats** by Michael Blumlein (Scream/Press), **The Ends of the Earth** by Lucius Shepard (Arkham House), **Prayers to Broken Stones** by Dan Simmons (Dark Harvest), **Her Smoke Rose Up Forever** by James Tiptree, Jr., and **Slow Dancing Through Time** by Gardner Dozois (Ursus/Ziesing). The surprising domination of the small presses in this area continued unabated.

Other good collections in 1990 included **The Leiber Chronicles** by Fritz Leiber (Dark Harvest), **Points of Departure** by Pat Murphy (Bantam Spectra), **N-Space** by Larry Niven (Tor), **The Gateway Trip** by Fred Pohl Del Rey), **Distant Signals and Other Stories** by Andrew Weiner (Porcepic), **Facets** by Walter Jon Williams (Tor), and the massive if somewhat uneven **Maps in Hell: The Short Fiction of Orson Scott Card** (Tor).

The best-of-the-year reprint anthology field remained very strong, with Michael Bishop's **Nebula Awards 24**, Gardner Dozois' **The Year's Best Science Fiction: Seventh Annual Collection**, Datlow and Windling's companion volume, **The Year's Best Fantasy and Horror: Third Annual Collection**, Wagner's **The Year's Best Horror Stories XVIII**, and Wollheim and Saha's **Annual World's Best SF**.

A noteworthy anthology of 1989, but out in paperback in 1990, is **Scare Care**, which was set up as a horror fiction project, sales of which benefit needy children. The general theme of children suffering makes it a powerful anthology, and it's very tastefully done, with no cruelty for its own sake, no gratuitous violence, and no exploitation of children in its pages.

There were only a few original anthologies of note last year, and some of those were partially reprint. Among the best were Ellen Datlow's **Alien Sex**, Thomas Monteleone's **Borderlands**, Silverberg and Haber's **Universe 1**, and the three "issues" of **Pulphouse: The Hardcover Magazine**.

It appears that only the continuing and growing ability of small presses to deliver superior collections, and the strong group of best-of-the-year anthologies, keep short fiction in book form a major factor in the field.

BOOK PUBLISHERS/EDITORS

The death of Donald A. Wollheim is a great loss to publishing. DAW is the last major independent publisher. Over the years DAW has introduced scores of major writers.

Some kind of special recognition ought to go to the people at Pulphouse. It's hard to figure how they turn out so much, and of such generally very high quality as well. It will be interesting to see if they can continue this pace another year, not that Kristine Kathryn Rusch will be taking over *The Magazine of Fantasy and Science Fiction*. Other small presses deserving the utmost respect include Arkham House, Dark Harvest, Mark Ziesing, Ursus Imprints, and Porcepic Press.

As for the major publishers, the Bantam Spectra/Foundation line appear to be the quality leaders now, followed closely by Tor. Tor remains unsure if they want to go the obscure literary route, the hot cyberpunk direction, the blast from the past or a more middle of the road approach. Putnam/Ace is publishing a wide variety of books. Del Rey is still dominating the best-seller lists, along with TSR and its generic fantasy adventures. Baen is sticking to a nearly 50% emphasis on military science fiction. DAW continues to publish enjoyable and often refreshing works by new and old authors alike.

It's been noted that more publishers are declining to bother with unsolicited manuscripts, as editors pass on the job of screening manuscripts to the literary agents. Whether this will be detrimental to the quality of material published, or just to the peace of mind of those of us without agents, we cannot say.

PROFESSIONAL FICTION MAGAZINES

As usual, the magazine market looks weak. *Analog*, *Asimov's*, and *F&SF*, the old stand-bys, head the list. But *Omni* continues under the capable hands of Ellen Datlow to publish one or two good pieces of short SF per issue. *Amazing*, on the ropes for years, may be poising for another revival in 1991. Semi-prozines are working their way to becoming prozines, or are already there, including *Aboriginal SF*, *Weird Tales*, *Interzone*, and the newer U.K. entry, *Fear*.

Isaac Asimov's SF Magazine remains the publication of most variety and highest overall quality, despite an occasional inclination to stretch the definition of speculative fiction to near the breaking point. Gardner Dozois has demonstrated, ever since he took the helm, that he is literate, widely-read, and tasteful in his selections.

The Magazine of Fantasy and Science Fiction maintains its lead, however, as the place for literate writing, although they did slip somewhat in 1990. Editor Ed Ferman put out the call for a new editor last year. *F&SF* has maintained a consistently high quality of published fiction, but has been in a state of genteel-decline for some time; a new editor might be the breath of fresh air it needs to start gaining ground, and new readers, again.

Of the other major SF magazines, *Analog* is the stodgiest, with an almost reactionary inflexibility hardening its edges. But *Analog* remains the bastion of hard science and publishes some excellent material each year. And finally, *Amazing* suffered a Near Death experience, but 1990 saw TSR step in with another transfusion of magazine-life-blood (funding), and announced that the patient shall be fine; it has yet to sit up and fulfill its eerie metamorphosis into a monthly slick-paper butterfly.

Charles C. Ryan's *Aboriginal SF* has yet to out-grown its amateurish feel either in layout, art, or content, although its presence and enthusiasm are much needed. It still is struggling with both style and content. *Weird Tales* continues to try to recapture the past and may have found its niche with a

small but steady fantasy audience, some of whom were abandoned when *The Twilight Zone* magazine folded.

Great Britain's two prozines appear to be quite healthy. *Interzone* now rivals its American counterparts for consistently good (if sometimes experimental) and often excellent fiction, and the best nonfiction of any professional magazine. And *Fear* is appearing on a very consistent basis with material aimed at fans of horror literature and movies.

Science fiction magazines have been defying reasonable predictions of failure for about fifteen years. Yet new voices are given stages here, and there seems to be some life left in the SF and fantasy prozine market.

SEMI-PROFESSIONAL FICTION MAGAZINES

Semi-professional magazines remain the place for "cutting edge" fiction. It also remains a field where a magazine is here one day and gone the next, and not an arena where long-term subscription dollars are well-spent.

Starshore was the latest impressive venture into science fiction semiprofessionalism that has failed after several promising issues. *Marion Zimmer Bradley's Fantasy Magazine*, however, continues to publish with much the same format, but more sense of *esprit de corps*. *Journal/Wired* was an admirable venture into the "cutting edge" of the field, where magazines like *New Pathways* and *Strange Plaza* continue to live a humble but proud existence.

Richard Chismer's *Cemetery Dance* holds a great deal of promise as a magazine to watch. The old standbys, *Deathrealm*, *2AM*, *Weirdbook*, and *Space and Time*, continue to produce good fiction on a regular basis. The remainder of the large field of semi-pros are of uneven quality and production values. Still, it is the place where one finds writers who write for the shear joy of putting words on paper.

There seems to have been the slightest move away from horror, though horror magazines are still in the majority. This may be a trend, or a few editors just experimenting with fantasy or science fiction because there's less competition. A debate may or may not be developing around what is called Christian context in the horror field, covering things like the use of the crucifix against vampires, the summoning of demons, the nature of evil, and so on, with some small press editors insisting on it and others claiming it should be jettisoned in the name of progress.

It's always hard to assess so volatile a market, but there's every reason to believe that with desk-top publishing ever more available, there will be plenty of editors publishing magazines to show where they believe the field should be headed.

NONFICTION BOOKS

It would be hard to top 1989's field of books about SF, lead by the Panshins' early SF analytical history, and followed by books by the likes of Heinlein, Clarke, Ellison and Le Guin. 1990's more modest line-up is lead by Norman Spinrad's **Science Fiction in the Real World** University of Illinois Press), which collects his brilliant essays from the past five years, many of them from *Asimov's*.

Other important books included **The SFWA Handbook** by Kristine Kathryn Rusch and Dean Wesley Smith, **How to Write Science Fiction and Fantasy** by Orson Scott Card (Writer's Digest Books), and **Science Fiction & Fantasy Book Review Annual: 1989** by Robert Collins and Robert Latham (Meckler), although the latter now serves more as a historical retrospective of the year then a current review journal. There also continue to be numerous academic volumes aimed at libraries from various university and academic presses.

Only a very few reference books were of note in 1990. There were two readers guides by Neil Barron, one on fantasy literature and one on horror (Garland), and two mammoth annual bibliographic volumes (covering 1984 and 1989, respectively) by Charles Brown and William Contento (Locus Press).

Art books were extremely rare in 1990, with the increase in graphic novels replacing the traditional artbooks. Only two major art books appeared: **The Art of Ken Kelly** (Friedlander) and the mammoth and creepy **H. R. Geiger's Biomechanics** (Morpheus International).

NONFICTION MAGAZINES/FANZINES

Although nonfiction books were temporarily moribund, the state of criticism, analysis and debate occurring in the field has never been better due to the continuing increase in semiprofessional magazines (like *QUANTUM*) and fanzines as well. 1990 may indeed have set a new high for SF critical journals, both in quality and quantity.

In addition to *QUANTUM*, David Hartwell's *The New York Review of Science Fiction* and Steve Brown's *Science Fiction Eye* dominate the U.S. field, with Elton Elliott's newly revived *Science Fiction Review* seeking to enter the fray in 1990. *NYSFR* continues to keep to an amazing monthly schedule while publishing much valuable material (along with much impenetrable work), while *SF Eye*'s all too infrequent issues are stuffed to overflowing with angry-young-man histrionics of the sort seldom seen since the early days of *THRUST*, and *never* before assembled in this quantity and quality. Meanwhile, in the U.K., *Foundation* continues to be a marvelous critical review magazine, despite sitting on the fence between the traditions and styles of fandom and those of academia.

A single issue of Damon Knight's *Monad* appeared from the ever industrious folk at Pulphouse, and although it made a small splash, just the thought of getting one of our early masters back in critical action is an exciting prospect. Mark Van Name's *Short Form* was noticeable last year primarily as a focus for the ever-growing debates regarding the fiction and philosophy of Orson Scott Card, and for passing along a fake post card to Harlan Ellison signed "Andy Porter" which resulted in Harlan responding at great and entertaining (to everyone but Andy) length.

Good critical articles, reviews, discussions and interviews could also be found in many less widely circulated fanzines such as *Nova Express*, *OtherRealms*, and *Pulsar*, as well as *Midnight Graffiti*, *The Blood Review*, the new horror review magazine, and virtually all of the fiction prozines and semiprozines. Not only is there almost certainly *more* speculative fiction criticism and commentary being published today than ever before, there is probably more truly important work being published as well. This may be the new Golden Age of Criticism in the SF field.

MOVIES/TELEVISION

In 1990 Philip K. Dick's fiction was once again translated onto the movie screen, as it was in **Bladerunner**, (based on the novel **Do Androids Dream of Electric Sheep?**), but this time the results were less successful. **Total Recall**, which was based mostly on the PKD short story "We Can Remember It For You Wholesale," was quite violent, and met with mixed reviews. Some believed it was a valid interpretation of the PKD story, and that the film's ending, largely unrelated to the PKD story, was not cinematic at all, but a literary montage depicted in real time. Others believe that Philip K. Dick's intellect appears to have drowned in blood in **Total Recall**, that it was easier to count the bodies than it was to stand Arnold Schwarzenegger's thick accent rolling over one-liners. In any case, it was the biggest-grossing SF film of the year.

Robocop II blasted its way into the theaters, and brought with it, besides amazing fire-power, some pointed satire of urban decay, modern life, and even interpersonal relationships. **Ghost** reassured everyone with sappy cliches presented by relatively fresh faces, while the animated **The Little Mermaid** demonstrated Disney Studio's mastery over cartoon fantasy films; they did the entire thing by hand, too, and the quality of the animation and art inspire tears of appreciation and amazement.

The Teenage Mutant Ninja Turtles went from comic book satire to media satiety in one long *Cowabunga*. Merchandising alone demonstrated an astonishing hunger for participation in the fantasy, and every kid in the country now believe that the names of a quartet of Renaissance artists actually refer to sewer-dwelling heroes in a half-shell. As an interesting sidelight, Harlan Ellison wrote an appreciative essay in his column, "Harlan Ellison's Watching" from *The Magazine of Fantasy & Science Fiction* concerning the genesis of the satire and imagery on which the turtles were based, which also makes TMNT out to be one of the great American rags-to-riches stories.

Although in many ways preposterous, **Dick Tracy** had a primary-color sense-of-life and an appropriate *feel* to it. **Edward Scissorhands** was another of Tim Burton's offbeat, totally imagined realities. Johnny Dep portrayed tenderness in the midst of razor-sharp steel. Finally, **The Handmaid's Tale**, one of the few attempts at bringing "serious" SF to the screen, proved to be one of those situations where a book refuses to translate into a good film. The menacing, trapped-in-an-insane-world feeling so vividly portrayed by the book, and so critical to the effect of the story, never came through. The intensity of Atwood's characterizations was

totally lost; only the weakest, and indeed silliest, parts of the plot and milieu remained.

On television, there was the Fox Network's hit, "The Simpsons," which demonstrated that cartoon fantasy can be darned realistic in plot and character and uncomfortably accurate in social satire while retaining a bizarre look. The last time this happened was when Hanna/Barbara looted Jackie Gleason's then-hit, "The Honeymooners," and transformed the treasures into "The Flintstones." Finally, *Twin Peaks* brought David Lynch's weirdness to TV's *masses* for the first time, and quickly developed a cult following as it drifted further and further into the realm of fantasy.

1990 also saw the fourth season of *Star Trek: The Next Generation*. The special significance of this seems to have escaped nearly everyone: the original *Star Trek* ran only three seasons. So this makes the follow-up, in some ways at least, more successful than the original series. Who would ever have thought?

So, another mediocre year for science fiction and fantasy in the visual media. But then, why should SF fare better there than art and good taste?

AUDIO TAPES

The growth in SF&F audiotape unexpectedly reversed in 1990. The most important tapes were only again Dercum Audio's three anthologies of **The Best Science Fiction Stories of the Year**, **The Best Fantasy Stories of the Year**, and **The Best Horror Stories of the Year**, edited by Orson Scott Card and Martin H. Greenberg. No other notable small-company projects appeared in 1990. The major audio houses produced a few SF books, most notably Brilliance Corporation's "Bookcassette" versions of such SF novels as **The Rowan**, Anne McCaffrey's adolescent science fantasy/romance.

Most of the other major tape publishers concentrated on *Star Trek* (Simon & Schuster), horror, or bestsellers, like Michael Crichton's dinosaur extravaganza, **Jurassic Park** (Random House). Listen for Pleasure apparently issued no SF-related taped in 1990, after being very active in earlier years.

It may be worth mentioning the only SF talk show on radio. It is called *Hour 25*, and is broadcast Friday nights, at 10:00 p.m. in the Los Angeles area on KRFK-FM. The show was founded by the late Mike Hodel. There are alternating hosts: Michael Straczynski, Arthur Cover, Steven Barnes, and others. Authors, fans, editors, others of the genre interviewed, and listeners can call in. The program begins with a calendar of upcoming SF events. The show is highly recommended to anyone close to the Southern California area.

SF AND FANTASY ART

Art continues to be dominated by the big three: Maitz, Whelan and Canty. All three produced a number of spectacular works on both hardcovers and paperbacks in 1990. Canty's work in particular remains breathtaking.

SF cover art largely consists of hardware, astronomical scenes, or little figures in the foreground of great vistas. Good work was done in 1990 in the "little figure, big vista" vein by Darrell Sweet on the cover of Chalker's **The Demon at Rainbow's End**, Judy Lee on Jo Clayton's **Shadow Play** (and the earlier books in this series), and an excellent cover by Tim White for **Sunshaker's War** by Tom Dietz. Gary Freeman did two great covers for *Asimov's* (January, and Mid-December). Janet Ausilio should be recognized for her moody interior illustrations in *Asimov's*; they play a central role in setting the visual tone of the magazine. Finally, two artists who should be noted for doublehandedly setting the tone of a magazine are Larry Blamire and David Brian at *Aboriginal SF*. For good or ill, their ubiquitous work stamps the magazine indelibly. Courtney Skinner is another artist in *Aboriginal* worthy of note.

COMIC BOOKS/GRAPHIC NOVELS

Science fiction in the comics and graphic novels continued to explode onto the publishing scene. The *Batman* phenomenon continued with **Batman: Digital Justice** by Pepe Moreno (DC Comics), and Alan Moore (of Batman fame) continued his talented career with a new graphic novel **V for Vendetta**, with David Lloyd.

More conventional SF also had some good examples in the comics. While Dark Horse's *Aliens vs. Predator #1* chalked up record advance sales, the exquisite Japanese **2001 Nights** by Yukinobu Hoshino was decidedly comforting for its attempts at intelligence. It is an interesting relatively-near-future hard-SF saga (from Viz Premieres Comics) and worth looking up.

1990 was also a good year for adaptions of written SF and fantasy into comic book format. Three issues appeared of *Orbit Graphic Science Fiction*, which features well done adaptions of stories from *Asimov's*. Tolkien's **The Hobbit** was the subject of a fine adaption by Charles Dixon, Sean Deming and David Wenzel (Ballantine/Eclipse Books). Finally, Joe Haldeman's **The Forever War** (NBM) was adapted into a three-volume graphic novel by Marano, the first volume of which appeared in 1990.

MISCELLANEOUS NOTES

H. P. Lovecraft's centenary was virtually ignored. Aside from some local celebrations of a dubious party-hat variety, and the unveiling of a small bronze plaque at the John Hay Library in Providence, RI, on August 20th, the centenary of HPL's birth, there was virtually no notice taken. No magazine devoted an issue to Lovecraft, and no anthologies were released. His work was rereleased in yet another paperback incarnation, but sold indifferently. This overall lack of response is sad, considering the lasting influence his body of work, his approach, and much of his imagery continues to exert upon both science fiction and horror fiction.

A 1990 World Fantasy Award (which takes the form of a bust of Howard Phillips Lovecraft, incidentally) was bestowed upon R. A. Lafferty for life-time achievement. Lafferty is a case in point when it comes when it comes to excellence in shorter forms. Nowhere but in SF short fiction publishing could a talent, a mind, and a body of work such as Lafferty's appear. Money has never found him, but appreciative readers can savor his distillations as long as there are a few who give a damn. So far, the 1990 World Fantasy Award that Lafferty won has not translated into a re-issuing of his writing by major publishers, which is too bad.

1990 saw J.G. Ballard complete his move from fringe New Wave/*New Worlds* SF writer to Literature 101 *wunderkind*, and then, to top things off, his new popularity resulted in many of his books being re-issued. He's even had a story about the effects of a neon-vermilion kind of Agent Orange appear in *Omni*. Despite all this, Ballard remains true to his initial visions. He was writing science fiction in a scientific, detached way, and including stunning imagery balanced between fantasy and delusion many years ago, and many are only now beginning to catch on to Michael Moorcock's greatest discovery.

In 1990, Raold Dahl died, depriving fantasy of one of its sardonic masters.

Also in 1990, amidst re-issues that restore his books to pre-bowdlerized, pre-editor state, Robert A. Heinlein's **Grumbles From The Grave** won the 1990 Locus Award for Best Nonfiction. Note should be taken of Virginia Heinlein's bravery and determination to give the world her husband's fiction *as he wrote it*. Such efforts should be applauded, and should be supported, because writing remains the one area of artistic endeavor where a committee can alter, at whim, any or all of a manuscript, where second-guessing, meddling, and anonymous changes are perpetrated as standard practice, and where the artist, the creator or the work has little or no say about how a work appears, how it's presented, or how it's distributed.

SF specialty bookstores have always been iffy propositions, and stores go under virtually every year. In our nation's capital, Moonstone Bookcellars, Washington, D.C.'s only SF specialty store (located just a few blocks up Pennsylvania Avenue from the White House) was closed in 1990 when they lost their lease. The entire block on which they were located for more than a decade was totally leveled within a few days of their closing. Our nation's capital is now undoubtedly the largest and most affluent community without a science fiction specialty store.

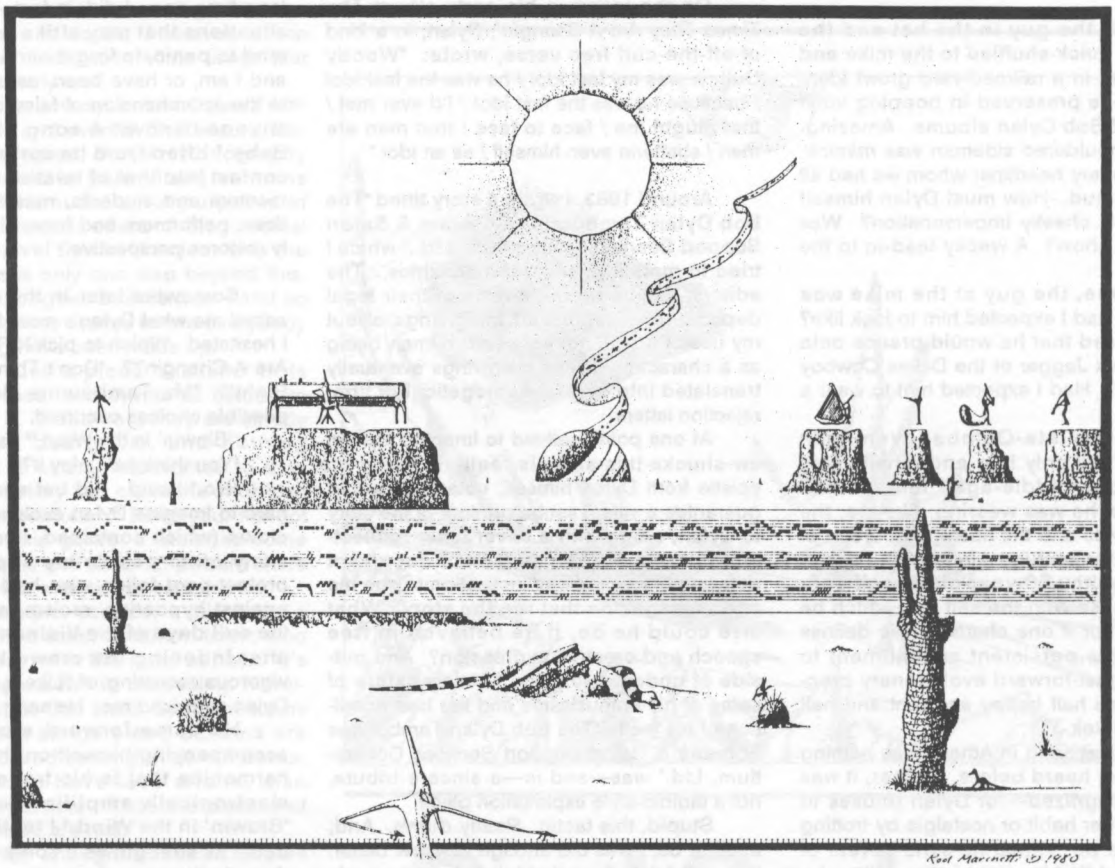
In Los Angeles, the world's oldest SF specialty-shop, Change Of Hobbit, finally bowed to the inevitable and announced that it would be closing its doors for good after some two decades of operation. Owner Sherry Gotlieb attributed this directly to financial-pressures, saying that they knew back in January, 1990 that they had but slim chance of surviving. Everyone who ever visited A Change of Hobbit cannot help but feel a little sad.

And finally, 1990 marked the increased use of such buzz-concepts as chaos theory, fractal logic, and nanotechnology, as well as the general abandonment of the well-rocked cyberpunk boat.

All in all, 1990 was an uneven year for the field of speculative fiction. Excellent work in all genres and forms continued to appear, but awash in a sea of mass-merchandised, brand-name and generic *product* that now forms the financial base of the industry.■

PITCHING PENNIES AGAINST THE STARBOARD BULKHEAD

A CONCERT ON SUNDAY, OCTOBER 28, 1990



Michael Bishop

Bob Dylan and I go back a long way. I was 19 when I saw him at Atlanta's Fox Theater in 1965. Back then, he'd recently adopted the bluesy electronic style that outraged the hard-core folkies who had pegged him as the second coming of Woody Guthrie. On Sunday, October 28, 1990, I saw Dylan in concert again, this time with my son, Jamie, a sophomore at the University of Georgia, himself just two weeks shy of his own nineteenth birthday. Dylan and his backup band played for an unbroken 105 minutes in the University Coliseum, and no one there, blessedly, seemed to want to regard the headliner as anybody other than himself.

This outing began three or four weeks before the concert when Jamie called to ask me if I'd like to give him (and me, too, since our birthdays are only three days apart) an early birthday present by taking him to see Dylan. Even though it's a two and a half hour drive from Pine Mountain to Athens, I agreed. My motive wasn't so much to rekindle youthful feelings of intensity and purpose, I told myself, as to share a special evening with my son. Seeing Dylan in concert together would put fresh hemp in the rope-bridge over our differences in age and perspective.

In fact, I was surprised—foolishly surprised, obviously—that Dylan remains such a powerful draw among young people. This is a songwriter and performer nearing his fiftieth birthday, with a debut album dating all the way back to 1962. If you limit yourself to those songs on which Dylan himself is the featured artist, you can probably count on the fingers of one hand the number of his Top 40 "hits." Dylan and the Top 40 may not be mutually exclusive, but the nature of his basic concerns often makes them incompatible, and Dylan hardly seems to care. In the aborning 1990s, then, why such an enthusiastic turnout for a man so quintessentially 1960s-ish, the folk-rock poet of a defunct protest era?

"We wanted to see a legend," said one of Jamie's friends, Angie Malone, who midway through the month had stood in line for several hours to buy seats for herself and her friends, including, I found, Jamie's and mine. (And, in fact, her explanation encapsulates *my* reasons for going to see Louis Armstrong in the Coliseum in 1964 or '65.) Legends transcend generations.

How you get to be a legend, though, seems to depend on the gift of a unique talent, the determination to use it, the integrity to resist its corruption or dilution, and the courage to grow. Talent and determination are not that rare, but integrity and courage are often in short supply. Dylan is no saint, but his legend derives not only from the beauty and power of his songs, but also from his continuing search for the good in both his art and himself.

Listening to an opening act that struck few resonances with me, I was growing impatient. Finally, four new musicians replaced the warm-up band (actually five, although the drummer, behind a battery of drums and brassy toadstoolish cymbals, almost seemed part of the equipment). These men huddled near the drum stand, leaned toward one another, bounced on the balls of their feet while milking their guitars of sweetly excruciating gouts of sound.

Two of the musicians were sartorial, if not physical, replicas of John Belushi and Dan Aykroyd in their Blues Brothers get-up. A third man, taller than all the others, boasted shiny leather pants and shoulder-length blond hair. The fourth band member, a scruffy figure in black stove-pipe pants, a light-colored hat, and a bulky jacket of either tan or gray, stepped about gingerly as he

played. He was wearing black boots, with decorative white insteps, and from the lower-arena seats in which Jamie and I were sitting, it almost seemed that he was wearing . . . spats.

Okay, I thought. The band's set. Dylan'll make his star-turn entrance in just a minute.

Instead, the guy in the hat and the ersatz spats quick-shuffled to the mike and began singing in a railroad-yard growl identical to the one preserved in popping vinyl on all my old Bob Dylan albums. Amazing. This stoop-shouldered sideman was *mimicking* the legendary headliner whom we had all come to applaud. How must Dylan himself feel about this cheeky impersonation? Was it part of the show? A wacky lead-in to the real thing?

Of course, the guy at the mike *was* Dylan. What had I expected him to look like? Had I supposed that he would prance onto stage like Mick Jagger or the Dallas Cowboy cheerleaders? Had I expected him to wear a tuxedo?

Dylan, this late-October evening in Athens, was still only four and a half years older than the middle-aged father I had become—but he was wearing, like me, the hard experience and the liberating burden of the past quarter century. He looked, I decided, like a healthy 50-year-old unself-consciously at ease with the self into which he has grown. For if one characteristic defines Dylan, it is his persistent commitment to growth, to a fast-forward evolutionary process that seems half happy accident and half premeditated trek.

Dylan's first song in Athens was nothing that I had ever heard before. Rather, it was nothing I *recognized*—for Dylan refuses to kowtow to either habit or nostalgia by trotting out, as some do, virtual lip-sync covers of the songs that first brought fame. When he performs a famous song, he imaginatively recasts it. His lyrics usually remain the same, but the inflection of the words, the speed with which he spiels them, and, yes, even the music behind them— all alter, subtly or radically, to embody the significance of that song to Dylan now, today.

Make it new, Ezra Pound advised T.S. Eliot and an entire post-World-War-One generation of poets. Dylan has adopted this motto as an artistic credo. He changes constantly, but never forsakes the essential core of talent, and integrity, defining him.

"Will Dylan talk to the audience?" Jamie asked me a song or two into the concert. "I've heard that sometimes he doesn't."

In fact, Dylan engages in little extraneous talk. (I was glad of this. I could imagine an unaccountably misplaced drunk in the Coliseum, prompted to it by on-stage blather, yelling out a request for "Feelings" or "Send in the Clowns.") At this concert, Dylan did talk a bit, but all I can recall is the following: "This is my theme song," he said, a statement that he immediately qualified by adding, "*One* of my theme songs."

The song in question was "It Ain't Me, Babe," and the intent of Dylan's remark may have been to disqualify himself not only as the salvation of the young woman addressed in the lyric, but also as a guru to anyone ill-advisedly inclined to lionize him. He refuses to wear the messianic cloak in which insecure fans sometimes try to drape him.

Dylan performs for all, but he seeks only for himself. If he has any wisdom to convey, it probably goes something like "To thine own self be true." He regards the idolization of himself or others as a crime against the humanity of those empedastaled and as a sin against oneself.

On the insert in his early album *The Times They Are A-Changin'*, Dylan, in a kind of off-the-cuff free verse, wrote: "Woody Guthrie was my last idol / he was the last idol / because he was the first idol / I'd ever met / that taught me / face to face / that men are men / shatterin even himself / as an idol."

Around 1983, I wrote a story titled "The Bob Dylan Tambourine Software & Satori Support Services Consortium, Ltd.," which I tried to market at several magazines. The editors, maybe on the advice of their legal departments, expressed misgivings about my use of a real, not yet dead, human being as a character. These misgivings eventually translated into several apologetic, but firm, rejection letters.

At one point, self-led to imagine that an aw-shucks-this-story-is-really-okay-by-me epistle from Dylan himself, notarized, would guarantee a sale, I sent a printout of the story to Dylan, along with a cover letter requesting, humbly, that he mail me a document detailing his lack of any inclination to sue me or any magazine that ran the story. What else could he do, if he believed in free speech and creative expression? And outside of underscoring the fleeting nature of some of his enthusiasms and the bad condition of his teeth, "The Bob Dylan Tambourine Software & Satori Support Services Consortium, Ltd." was—and *is*—a sincere tribute, not a tabloid-style exploitation piece.

Stupid, this tactic. Really dumb. And, at 38 or 39, I was old enough to know better. I'm grateful, in fact, that I didn't elicit a reply from Dylan's attorneys threatening the confiscation (if I didn't shred the story and amscray) of my word processor and all my extant copyrights.

Here, if I still had a copy, I'd quote from my heart-rending appeal to Dylan. The original probably resides either in dead-letter limbo or in a file for crank correspondence in the New York offices of Columbia Records. If, that is, it resides— exists—anywhere. I hope that Dylan, if he ever really laid hands on them, read neither the printout nor the pleading cover letter. In fact, it pleases me to imagine that he handed them over to somebody like Emmie Lou Harris, who mercifully burned them to ashes while he was writing a brand-new song.

You may say that I'm a dreamer. . . .

The point of this embarrassing confession, which I could make seem diagnostic of a peculiar personal insecurity if I added that I once wrote Stephen King a similar letter, under somewhat different circumstances, is that Dylan (and King, for that matter) taught me, belatedly, an important lesson by declining to reply.

(It would make no difference to the importance of this lesson, by the way, if these failures to reply stemmed from ignorance of my appeals rather than a conscious decision, or a standing policy, *not* to acknowledge such out-of-left-field pleas.)

What I learned is that adults have to walk unassisted. You can walk *with* another, sure, but you can't assume that your presence is always a welcome one, and you can't use the person at your side as a crutch. You can't ask to be piggybacked. You can't even insist that those walking with you match their strides to yours.

Yes, I should have learned that lesson a long time ago. I did, in fact, but in crises, or situations that may strike us as crises, we tend to panic, to forget certain home truths; and I am, or have been, as pathetically prey to the apprehension of false crises as almost anyone I know. A song like "It Ain't Me Babe," lifted from its surface boy-to-girl context into that of relationships between mentors and students, masters and apprentices, performers and fans, etc., etc., serenely restores perspective.

Somewhat later in the concert, Jamie asked me what Dylan's most famous song is. I hesitated. Which to pick? "The Times They Are A-Changin'"? "Don't Think Twice, It's All Right"? "Mr. Tambourine Man"? A host of possible choices occurred.

"'Blowin' in the Wind,'" I said.

"You think he'll play it?"

"No," I said. "I'd bet against it." It was hard to imagine Dylan evoking for this 1990s crowd (which contained, I confess, a good many other people my age or older) the protest-poet folkie who had railed waiflike against hypocrisy, racism, and war during the evil days of the Vietnam conflict. But after inducing the crowd to groove to a vigorous recasting of "Like a Rolling Stone," Dylan surprised me. He sang it.

He came forward alone to sing it, accompanying himself on the neck-braced harmonica that is his trademark, and an electronically amplified acoustic guitar. "Blowin' in the Wind," I realized, does not date. Its strength as a song, and our recurring obstinacy and orneriness of spirit as a species, prevent it from dating. People still yearn to be free; cannonballs still mutilate our dreams, or threaten to; and people with corrupt or fearful souls still refuse to confront that which cries to heaven for remedy.

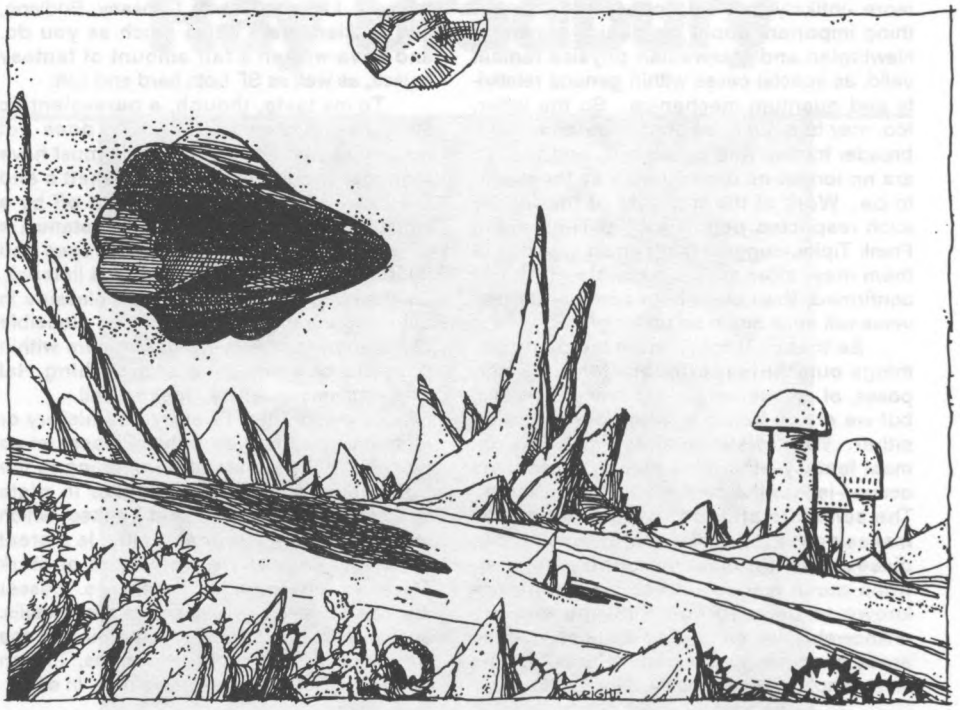
Against all my expectations, Dylan sang "Blowin' in the Wind," letting its lyrics hover hauntingly over Soweto, Baghdad, Guatemala City, Washington, D.C., inner-city America, all the sour labyrinths of the human heart. And it worked. In fact, for me, this song was the evening's highlight—added justification, if I needed it, for driving 150 miles to attend a concert with my son.

Once, long ago, Dylan defined a song as "anything that can walk by itself," and almost every song that Dylan and his band performed that night got up and strutted unassisted.

Indeed, the program's finale, "All Along the Watchtower," broke into truly funky high-stepping, power-amping its way past even the classic Jimi Hendrix cover. The concert-goers on the floor, most of whom had long since abandoned chairs to crowd the stage, rocked in joyous synchrony, like a water-park pool with its wave machines in overdrive.

Released to the evening's brisk chill, I asked Jamie what he'd thought. "I liked it." Of course he had. Hands in pockets, we walked side by side back to his dorm, and, although I had to leave him there, I had plenty of company on my long drive home.■

Beer-Mutterings



Poul Anderson

The perennial argument about science fiction vs. fantasy has cropped up in this journal, and I may as well put in my twenty cents' worth. (It was two cents when I was young, but you know what inflation has done.) Of course, the dispute never will be settled, because it isn't about facts, it's about personal tastes and the meanings that we, individually, give to words. However, let me offer for your consideration some usage that seems to work fairly well.

All fiction is fantasy, in that it deals with unreal persons and events. To be sure, this is a matter of degree. Some historiography (and a great deal of journalism) contains inventions of the authors, for purposes of conjecture or dramatic effect. A biographical or historical novel that sticks closely to the recorded facts is only one step beyond this. *The roman à clef* goes a bit further—and so on, until we get into stories where everybody and everything have been made up.

We call such a piece "realistic" if its characters, places, and events all belong to real classes. If, in addition, they are strictly here-and-now bourgeois, and nothing happens that is of any importance to anybody else, the story can claim the snobbish designation "mainstream." Mind you, I'm not putting down this genre; it includes some very fine work, as well as its 90 percent share of crud. So does every other sort.

As an example, consider a tale about a hash slinger in a small Southern town, who has a love affair with the local banker. It's total fiction, right down to the setting. Nevertheless, we know that small Southern towns exist, that hash slingers and bankers are usually numbered among their residents, and that people have love affairs, also across social barriers. Thus the classes of the story elements are real.

Note to the Thought Police: Observe that I have not specified which of these two persons is of which sex, or, for that matter, that the sexes are opposite.

Fantasy *sensu stricto* is fiction employing classes that, as far as we know, do not exist, never did, and never will. Examples are witches, wizards, pagan gods, and benign governments. Hereinafter I will give this meaning to "fantasy." Science fiction (SF) is fiction employing classes that, as far as we know, do not exist among us, but that might exist elsewhere in the universe, or might have existed in the past, or might come to existence in the future. Examples are human expeditions to other planets, robots with consciousness, a single state ruling Earth, and extraterrestrial life.

Just the same, we run into ambiguous areas. Is an account of a Presidential campaign, set in the near future merely because the story demands it, science fiction? Is a historical narrative in which the dates of certain events are juggled a bit, because that accommodates the plot, either fantasy or SF using a parallel world? What of Jean Auel's romances about paleolithic hunters or Mary Renault's novels about Theseus, necessarily almost entirely conjecture? Well, reality (and literature is part of reality) never does quite fit into our neat little definitions. Having acknowledged this, I'll leave the borderlands and return to those writings labeled "SF" and "fantasy."

Obviously the distinction between them is as vague as the distinction between them together and the "mainstream." The Mars stories of Ray Bradbury and Leigh Brackett had the good old motif of interplanetary travel and colonization; they avoided anything overtly supernatural; but astronomy had already shown that the real Mars was nothing like theirs, and the "forces" by which ghost-like entities were brought on stage had nothing to do with physics. Contrastingly, L. Sprague de Camp and Fletcher Pratt took Harold Shea to a variety of magical worlds, but developed them with the most rigorous scientific logic. Again, I am not putting anybody down. These are wonderful stories; they simply don't conform to categories.

At first glance, "hard science fiction" seems clearly indentifiable. I take it to be that which brings in nothing we believe is impossible. Granted, it extrapolates. We don't *know* just what the specs of a truly interplanetary ship will be; we don't *know* whether there is life in the atmosphere of Jupiter, or a planetary system at Alpha Centauri, or any intelligence but ours anywhere in the cosmos. Yet we can describe such things in terms that are admittedly general but that violate no law of nature with which we are familiar and require no additional laws of nature in order to occur.

Even here, though, the boundary lines blur. For example, while the eventual construction of artificial intelligence equal to or greater than our own seems a reasonable prospect, so far we haven't established the possibility; and indeed Roger Penrose (**The Emperor's New Mind**) has his doubts about it. As another example, while much is known about what conditions are like, or ought to be like, in the neighborhood of a black hole (enough that many stories about them are demonstrably absurd), much also remains uncertain; physicists, let alone writers, can only make educated guesses.

Finally, hard SF embodies what may be the wildest proposition of the lot—the implication that we, today, have discovered every basic aspect of reality, that nothing is left but to fill in some details and no further revolution in our understanding will ever happen.

Once more, don't get me wrong. I dearly love this breed of story when it's well done. It's just that it has its own limitations, same as every other art form.

This leads us to those concepts that Andrew Weiner [in *Q*38] lumps together as impossibilities, such as faster-than-light travel (FTL) and time travel (TT). When we employ them in fiction, don't we make ourselves fantasists akin to Bradbury and Brackett?

I would say no, for the following rea-

sons. It is true that while the evidence for ghosts and gods (i.e. life after death and some kind of supernatural Presence) is very poor, most physicists would say it's better than the evidence for FTL or TT, and that at least the notions aren't logically ridiculous. To add another, I agree that the alleged evidence for "psionics" is on a par with that for flying saucers.

Nevertheless, as said, it seems still more unlikely that we, today, know everything important about the nature of nature. Newtonian and Maxwellian physics remain valid, as special cases within general relativity and quantum mechanics. So the latter, too, may turn out to be special cases within a broader frame. And in fact, FTL and yes, TT are no longer as disreputable as they used to be. Work at the frontiers of theory, by such respected people as Kip Thorne and Frank Tipler, suggest that certain versions of them may, after all, be possible. If this is confirmed, then our whole conceptual universe will once again be up for grabs.

Be that as it may, when we postulate things outside the textbooks for story purposes, of course we are not being scientific, but we aren't being entirely nonscientific either. What distinguishes most SF from most fantasy—though I repeat, crossovers occur—is less the content than the attitude. The scientific attitude is that the cosmos makes sense in its own right; that we can discover its fundamental principles; that, while much will doubtless always be unknown to us, and some things may be unknowable, we can define and describe the areas of mystery. SF generally takes this view, implicitly or explicitly. No matter how fanciful, it is rationalistic and empirically oriented.

In contrast, fantasy generally embodies a prescientific attitude. Its worlds are essentially animistic, and if they have any basic laws or limits, these are merely what the author of a given story has chosen to impose.

Are you getting as tired as I am of my asserting that the above is not a derogatory remark? I admire Cabell, Dunsany, Eddison, and Tolkien every bit as much as you do, and have written a fair amount of fantasy myself, as well as SF both hard and soft.

To my taste, though, a parascientific story assumption such as FTL does not mean that anything goes. A tale must have high merit, on the order of Brackett's and Bradbury's, if I am not to be put off by a violation of *known* science. For instance, a planet with an atmosphere of hydrogen and fluorine is subject matter only for a limerick. On the other hand, there is keen pleasure in following a yarn that explores the plausible consequence of varying parameters within possible bounds— the sort of thing Hal Clement, among others, does so well.

Likewise, in a TT story, the history or archeology should be right. Please, let us have no more scenes of Nero sitting in the Colosseum or Arthurian knights in plate armor! Yes, the **Connecticut Yankee**, which totally ignores historical reality, is a great work; but we don't have writers of Mark Twain's caliber around these days. Lesser ones had better pay attention to their details. Just as FTL can show us something of the wonder and variety of the cosmos, TT can make the past vivid and marvelous: in either case, provided the author respects the facts. (I don't mean that those are the only uses for these literary devices.)

At the same time, I must disagree with my friend Gregory Benford, when he maintains that writing fantasy is playing tennis with the net down. I think that here we have the same obligation toward the verifiable truth. For instance, when Karen and I were engaged on **The King of Ys**, we not only visited sites in order to get the geography straight, we put in a year's worth of library research on the era, even checking the dates of astronomical events such as eclipses. As for purely imaginary worlds, they need to make sense. For instance, most people in them have to be reasonably honest and productive, or everybody will starve; they can only support a minority of thieves, pirates, and politicians. If this is not the situation, then the author should give us some rationale, e.g., that the population consists entirely of magicians.

Beyond this, although most fantasy is prescientific in attitude, intuitive more than logical, the author should think the story assumptions through, and *feel* them through. As a reader I want to be convinced that this is a genuine Faerie, a genuine Heaven, or whatever, not just suburbia in drag.

Unless, of course, the whole idea is to put suburbia in drag and have fun. Nothing wrong with that. Don't bother pointing out the countless exceptions to everything I've said here. I'm well aware of them. Not being a critic, I don't confuse my preferences with the law and the prophets. The attempt was only to clarify a debate that seemed to be getting a bit murky.■

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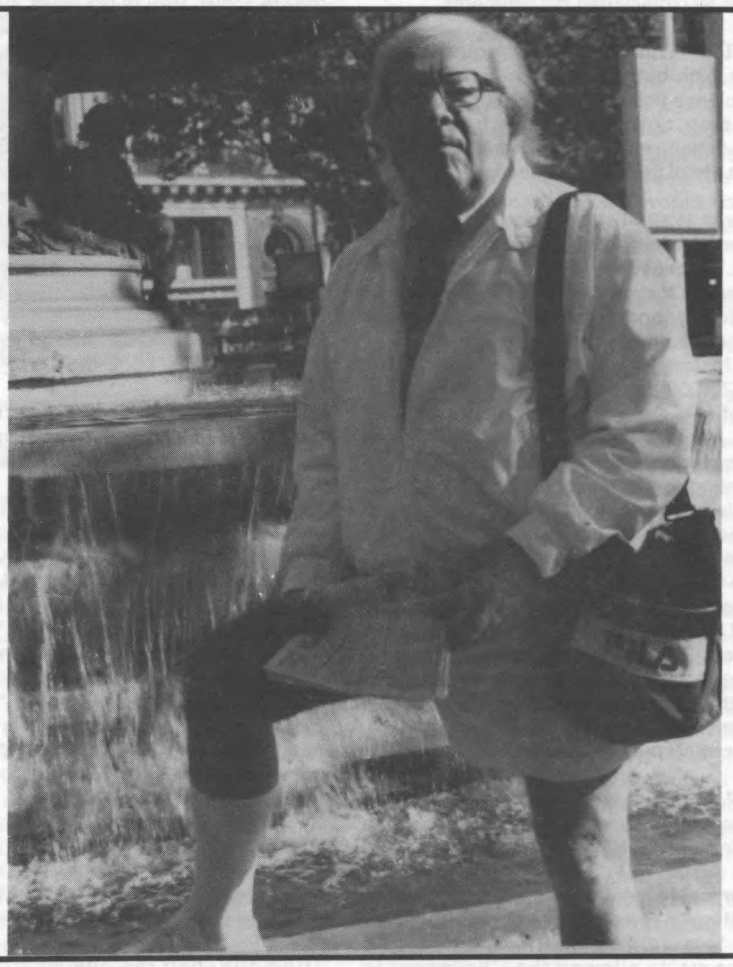
The Romance of Places:

An Interview with

Ray Bradbury



by Robert Couteau

Ray Bradbury is one of the most well-known figures in science-fiction today. His books include ***The Martian Chronicles, The Illustrated Man,*** *and* ***Fahrenheit 451****—the latter filmed by Truffaut in 1966. He is the winner of numerous awards for his books and screenplays, and was Idea Consultant for the United States Pavilion at the 1964 World's Fair. He has also worked as a consultant on city engineering and rapid transit.*

A frequent visitor to Paris, especially to the restaurants and bookshops in the Latin Quarter, Bradbury claims to have fallen in love with it all 37 years ago when he first arrived here to work with John Huston on the screenplay of ***Moby Dick****. Seated sipping coffee in the lobby of the Hotel Normandy, near the Palais-Royal, Bradbury spoke of his fascination with the city, along with other passions such as city planning, his method of writing, and the future of science fiction.*

QUANTUM: Do you have any sort of daily ritual which serves as a preparation to writing, or do you just sit down at a certain time and begin?

Bradbury: Well the ritual is waking up, number one, and then lying in bed and listening to my voices. So, over a period of years...I call it my morning theater; it's inside my head, and my characters talk to one another, and when it reaches a certain pitch of excitement I jump out of bed and I run and trap them before they are gone. So I never have to worry about a routine; they're always in there talking.

QUANTUM: How long do you write?

Bradbury: Oh, a couple of hours. You can do three or four thousand words and that's more than enough for one day.

QUANTUM: How about the building of a story; do your characters and plots always arise spontaneously, or do they ever originate in carefully planned constructs?

Bradbury: No, any carefully planned thing destroys the creativity. You can't think your way through a story, you have to live it. So you don't build a story, you allow it to explode.

QUANTUM: Do you, for instance, use people and places out of the past, out of your own life?

Bradbury: Very rarely. More recently, yes, in my two murder mysteries, **Death is a Lonely Business** and the sequel, which just came out, **A Graveyard for Lunatics**. Events in my past life are in there, some people that I knew. But most of my stories are ideas in action. In other words, I get a concept, and I let it run away. I find a character to act-out the idea. And then the story takes care of itself.

QUANTUM: Have you ever used characters or settings first observed in dream states?

Bradbury: No, dreams don't work. I don't know anyone who ever wrote anything based on dreams constantly. You may get inspiration once every ten years. But dreams are supposed to function to cure you of some problem that you have, so you leave those alone.

QUANTUM: You've been received by world leaders such as Mikhail Gorbachev. When the Apollo astronauts landed on the moon they paid you homage by naming the Dandelion Crater in honor of your novel **Dandelion Wine**. How have these experiences affected your writing?

Bradbury: Not at all. You just don't think about it; you shouldn't. The most dangerous thing you can do is to know who you are. See, Norman Mailers's problem is he thinks he's Norman Mailer. And Gore Vidal's problem is he thinks he's Gore Vidal. I don't think I'm Ray Bradbury. You see, there's a big difference. Just do your work everyday, don't go around thinking, "Geez, wow!" The hell with that. The work is important, the work is fun and there's no time: if you get into your work everyday, there's no time to think who you are.

QUANTUM: I'm curious about your vision of the future. I'm thinking of a story, now: "The Pedestrian", in which you express a rather paranoid vision of the future. What is your vision of the future, especially the political future, today?

Bradbury: It's very optimistic. Look what's happened in the last eight months. Because America stood firm, and just stayed quietly there, finally the communists gave up. They were an evil empire; Reagan was absolutely right.

QUANTUM: How will the opening of the East Bloc affect science-fiction writing?

Bradbury: I don't think it will affect it much. Because we've always talked about freedom, we've always talked about totalitarian governments. After all, **Fahrenheit 451** is all about Russia, and all about China, isn't it? And all about the totalitarians everywhere, either left or right, doesn't matter where they are, they're book burners, all of them. And so **Fahrenheit** will continue to be a read book, by people all over the world, 'cause there are still totalitarian governments.

QUANTUM: This past August you celebrated your 70th birthday. After devoting your life to science-fiction, have you arrived at any conclusion concerning the function of science-fiction, either in our individual lives, or in the life of the social collective?

Bradbury: Well, it's the most important fiction ever invented. But people haven't given it credit. Because it has to do with the history of ideas. Of dreaming an idea, birthing an idea, blueprinting an idea, making it into a fact. And then moving on to the next idea.

The history of science-fiction started in caves, 20,000 years ago. The ideas on the walls of the caves were problems to be solved. It's problem solving. Primitive scientific knowledge, primitive dreams, primitive blueprinting to solve problems. You look on the walls of the caves, they had pictures of antelopes, gazelles, and mammoths. The problem was how do you kill them? That's a science-fiction problem. You have to think of it first before you can settle it. Then, you find ways of inventing knives, and then spears. A spear is an extension of a man's arm, and his imagination. And when you throw it , you're throwing your will, and you're killing the animal. So that's science-fiction dreaming becoming primitive fact.

QUANTUM: What are some of the directions that science-fiction writing will explore in the oncoming decades?

Bradbury: Hopefully, a lot of our thinking and writing in the next twenty or thirty years will be to get us back into space again, because we've allowed the Challenger to destroy our will power. See, what happened in the twenty-four hours following the explosion was, that film was on the air a hundred times. You see a thing often enough, you begin to disbelieve in the future. Television is very dangerous. Because it repeats and repeats and repeats our disasters instead of our triumphs.

QUANTUM: Earlier you mentioned something about the need to be uplifted and you used the word 'soul'. Is this the long-term function of science-fiction, or your vision of what we need in the future? Are you talking about a unifying spiritual vision?

Bradbury: Yeah, I try to write about it. My stories are warnings, they're not predictions. If they were predictions I wouldn't do them. Because then I'd be part of the doom-ridden psychology. Every time I name the problem, I try to give the solution.

So not only have I talked about the future and the past, but I've been part of creating three malls, in California: the Glendale Galleria, the Horton Plaza, in San Diego, and the Westside Pavilion, at Westwood Boulevard. In other words, the failures of cities is the failure of chambers of commerce and the failure of the mayors and the city councils who don't understand what cities are. They're in for political power, they're not in to recreate the city, and make it better for everyone. So my dream has been, if they won't do it, some sort of corporate effort has to do it.

And Disney is my hero. He created a model. Disneyland, Disney World, EPCOT, they're social; they're not cities, but they give you examples of ways of living. Of lots of trees, lots of flowers. Lots of fountains and ponds, lots of places to sit, lots of places to eat, so that you can get out of the house again. In a lot of cities people can't get out of the house, they're not safe. So a mall is an environment which is safe, and beautiful—it can be—and creative, and filled with examples of ways of living like you find in the Latin Quarter here, over by Notre-Dame. So I'm trying to introduce that into American Culture, to give people a chance to walk with their families, and to be happy, instead of being afraid, walking through the streets of New York.

QUANTUM: When did you first become intrigued with cities? Was it an interest at all associated with science-fiction?

Bradbury: When I was eight years old and saw the covers of science-fiction magazines. They're all architectural. We love science-fiction because it's architectural. All of the big science-fiction films of the last twenty years are architectural. "2001," when you see the rocket ship flying through the air, it's a city! It's a big city up there. And in "Close Encounters of the Third Kind," when the mother ship descends, it's not a ship, it's a city. It's so beautiful. And when the aliens come out of the ship, you want to go back in with them, and go away forever. And when one of the characters does, your heart goes with him.

So, we love architecture; we love the romances of places. And identifiable objects—in Paris, London, Rome—if you took the Eiffel Tower out of Paris and the Arc-de-Triomphe, half the city would be gone, because of the objects, the romance of objects. I've written articles which have influenced the building of these malls at home. I wrote an article called "The Aesthetics of Lostness". We travel for romance, we travel for architecture...

Malls are a temporary answer. The mall is a city away from the city, because the city doesn't know what it's doing. Corporations know what to do. Because they have to know; they have to make a profit. Profit is a great motive. But cities don't have to make a profit. Governments don't have to make a profit, do they? The experiment doesn't work, they say, "Oh, what the hell let's tax people." But corporations, you've got to make sure you know what you're doing, because otherwise you're out of business.

QUANTUM: I've noticed that commentators have often noted your ambiguous, or at least changing relationship, with technology. Earlier in your life you chose to down-play its role, but later on you gained a certain faith in technology and even, for the first time, flew in an airplane. Do you care to comment on your current feelings regarding high-tech?

Bradbury: Well, you know, when you're twenty it's easy to be negative. We were coming out of World War II, and so, it was a negative time. And then the atom bomb came along. There was the time, in the middle of the summer of '46 or '47, when they were going to explode the first super-nuclear warhead, out in the islands. But the scientists weren't quite sure whether the earth wouldn't catch on fire. What if the earth caught on, and the whole thing went up? Well, the night before...I think everyone in the world thought about it. So you become a philosopher that night, don't you? What if this is the last night of the world? So, it didn't happen, thank God. But nevertheless, it was a negative time, and out of that I wrote a lot of things that went into the **Martian Chronicles**. Including "There Will Come Soft Rains", the house that lives on after the people and talks to itself. So it's all part of a time, and my being very young, in my twenties.

Then, as time progressed, and I learned more about those positive inventions that give us freedoms—the Xerox machine is the freedom to have your own printing press! And now we have the Fax Machine, which is another printing press. Not only can you send things, but you can print things in your own house. So the ability to acquire knowledge and dispense it is a thousand-fold.

QUANTUM: Was your faith in government shaken as well, at that time?

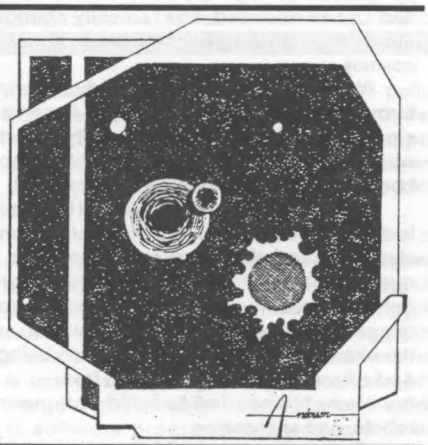
Bradbury: I think that politically the world is mad; always has been, probably always will be.

QUANTUM: Do your future plans involve a political role of some type?

Bradbury: No, no; there's no power there, and you become one of those dummies. If you're inside the political scheme you can't do anything. You're not allowed to speak up. The good things in our country are coming from the outside, corporate effort. EPCOT is a permanent world's fair, which I always wanted to have when I was twelve. 'Cause I saw the Chicago World's Fair, in 1933, and discovered they were going to tear it down in two years. Why tear down something so beautiful, that is a centrifuge for the young, to lure people into life, so that when they come out of a museum, or a world's fair, they want to live forever? That happened to me, both the fiction that I read, and the world's fairs that I saw. And then, finally, I was invited to create the interior of the United States Pavilion at the New York World's Fair in '64. Can you imagine how excited I was? 'Cause I'm changing lives, and that's the thing. If you can build a good museum, if you can make a good film, if you can build a good world's fair, if you can build a good mall, you're changing the future. You're influencing people, so that they'll get up in the morning and say, 'Hey it's worthwhile going to work'. That's my function, and it should be the function of every science-fiction writer around. To offer hope. To name the problem, and then offer the solution. And I do, all the time. ■

ON SCIENCE

Human Destiny and the End of Time



Jonathan V. Post

Since this is the first of my regular columns as Science Editor for *QUANTUM*, let me begin with a grandiose subject: the entire coming history of the universe until the end of time. That way, all future columns will really be prequels.

My wife and I are both scientists and science fiction authors, and we have longed for a column on cutting-edge science topics of interest to the science fiction world. This would scatter the seeds for "hard SF" stories yet to come, attract new scientists and engineers into SF, and tell us where to look in technical journals for imagination-provoking material. With the urging of *QUANTUM*'s distinguished Editor and Publisher (himself a scientist), I decided to write the column myself, on the principle that one should try to write what one really wants to read in the first place.

Today's column began as Chapter 48 of a 50-chapter book, **Computer Futures**, which was contracted by Baen Books in 1982, following a panel discussion we did together at Norwescon. Jim Baen paid me $2000 on signing the contract, with $6000 more to follow, but he was never happy with the rewrites he demanded, and so the book never appeared. This is a shame, not just because I could really have used the $6000, but because the drafts I delivered included chapters on Hypertext, Nanotechnology, Genetic Algorithms, Artificial Life, and Artificial Reality. Indeed, it would have been the first book from a major publisher to deal with any one of these topics!

I had, you see, well before Apple, Tandy, and IBM ever got into the PC business, co-implemented the world's first personal computer Hypertext system (on a Processor Technology Sol-20) while working with mad genius software guru Ted Nelson, and demonstrated it at the First Personal Computer Conference in 1976. My doctoral research in the early 1970's was in what is now called Nanotechnology (I called it Molecular Cybernetics) and the Thesis Committee never accepted or rejected the thesis—they simply refused to read it on the grounds that I must surely have confused science and science fiction—but that's another story, which we'll get back to in another column.

Returning to Human Destiny and the End of Time, we will sweep over human colonization of the Galaxy, burn-out of stars, use of black holes by supersocieties, extinction of galaxies, decay of protons, quantum flow of all solid matter, Hawking evaporation of black holes, spontaneous transmutation, black hole recycling, and electron-positron ambiplasma life.

The Era of Galactic Colonization

The far future is, to put it mildly, absolutely out of this world. People, and the computers with which we will merge, will expand throughout the galaxy over a multi-million year migration. It was a team of man and computer that made this prediction, in detail, based on historical evidence.

Eric Jones, my fellow Caltech alumnus, now at the Los Alamos National Laboratory's Earth and Space Division, teamed with a Control Data Corporation Cyber 64 and a CDC 7600 vector supercomputer. The input included data on the paths and periods of human migrations over the last 3.5 kiloyears and population dynamic equations.

The computer made billions of arithmetic operations in projecting Eric Jones' model into the future. Three generations from now, the model predicted, Earth population will reach a carrying capacity of 20 billion. Jones know that the Polynesians had migrated outward across the Pacific archipelagoes at regular intervals, typically when carrying-capacity population levels were reached.

The model included this data, and figures on solar system travel when population hits 20 billion, space mining ventures on the moon and among mineral-rich asteroids evolve into mini-colonies of 25 to 30 families. It costs billions to reach the asteroids— but some asteroids will be worth $1 trillion per cubic kilometer at current market rates.

By the way, that's the answer to those who complain about the expenses of the space program. The question is not "how can we allocate the expenses?" but "how should we divide the multiquadrillion dollar profit?" I asked former NASA Administrator Tom Paine this question, at the Second International Conference on Solar System Exploration in 1989, and he agreed with the scale of my budget estimates. He said that "as a card-carrying member of the Mars Underground, we will need to invest over $5 trillion on Mars in the 21st Century" but that we'd earn that back many times over. To ignore the wealth of our solar system is akin to Neanderthals freezing to death on top of a coal mine.

Not too long after the glaciers withdrew, human culture had migrated to almost everywhere habitable on this planet. With 1% to 2% population increase per year— an historically normal rule— saturation levels are achieved, and people take advantage of their technology to move in major migrations.

The original families, living a fairly conventional lifestyle among the asteroids—as did Robert Heinlein's "Rolling Stones" family—will start to increase for investment opportunities and the availability of personalities favoring travel over urban crowding. Colonies of a major wave of space migration, each supporting about 10,000 people, will eventually spread to every habitable planet, moon, and asteroid in the solar system. And what is the saturation point for the habitable solar system? A trillion people (10^{12}), says the model. Colonies built in space will first commute to local resources then move into goods production, then into self-sufficiency.

The population of a trillion people—one terafolk—will mass migrate again, assuming the availability of spaceships capable of 7% to 10% of the speed of light. Spaceships would have the regenerative life-support systems of colonies, and would collect fuel as they travel, fuel containers having first been launched (unmanned), from the solar system.

As population expands to neighboring star systems, the CDC processors show the pattern of migration across a map of the galaxy. Over a few million years, population growth rates could fall to 0.01% per year. The four-dimensional pattern of human civilization will be an expanding sphere with a missing slice—the last frontiers of the galaxy to be colonized will be on the opposite side of the galaxy from where we begin. [above based on "Model Predicts Space Colonies within Three Generations," Tom Henkel (*Computerworld*, 15 February 1982, p. 1; see also **Interstellar Migration and the Human Experience**, ed. Ben R. Finney and Eric M. Jones, University of California Press, 1985).

The carrying capacity of the galaxy is a human population which I calculate, from Eric Jones' assumptions, to be around 10^{23} people, one hundred sextillion. That is as many people as there are atoms in a ten carat diamond. Or, to put it in terms familiar to a chemist, a sixth of a mole of people. A "mole" is Avogadro's number of anything (6.02×10^{23}). Since I mention the term, I'll note that in photochemistry an "Einstein" is a mole of photons. There are roughly a mole of stars in the universe. In an article I had published a decade ago, I said that the appropriate unit for the ultimate databases of the future should be a "Shannon"—one mole of bits. Holey Moley! Which leads us to look deeply into holes...

The Anti-Heat-Death Era

Our model implicitly assumes that the galaxy starts out uninhabited. This possibility—human migration through a galaxy devoid of ETs—was first described by Isaac Asimov, in the *Foundation* novels. A similar model suggests that the galaxy may indeed be waiting for waves of human migration. That is the Von Neuman machine anti-ET model, which suggests that the fact that we do NOT see self-replicating interstellar robot spacecraft (like Fred Saberhagen's "Berserkers") implies that there is not now, and never has been, anybody out there to build them.

On the other hand, as Greg Bear points out in his wonderful novel **The Forge of God**, the reason we don't see self-replicating interstellar robot spacecraft may be that

there is a galactic ecology, in which such devices are preyed on by other gadgets. As Jonathan Swift observed, "Great fleas have smaller fleas, upon their backs to bite 'em, and those in turn have smaller still, so on, ad infinitum."

Some of you have noticed that my wife (Dr. Christine Carmichael) and I appear, under our own names, as characters in Greg Bear's novel. That's because I invented one-and-one-half of the two fictional methods by which the Earth is utterly destroyed. At the 1990 Worldcon, in The Hague, Greg presented me with a cute technical problem for his sequel. I solved it over dinner. As payment, me and Chrissie will turn out to have survived the annihilation of Earth, and our son Andrew Carmichael Post (two years old as I write this) hitchhikes away on an alien interstellar spaceship. And speaking of interstellar migration....

Migration of human/machine symbiont colonies to the stars need not stop with the halo of stars enveloping the Milky Way galaxy. But the mysteries of human immortality do not lie in space alone, but also in time. Olaf Stapledon first projected, in **The Star Maker**, intergalactic civilization. So, earlier, H.G. Wells, in "The Chronic Argonauts" (later **The Time Machine**) projected life forward until the sun was a dim red star.

Will life be able to evolve forever, migrating and adapting even as the stars burn out? Isaac Asimov thinks not, due to the "heat death of the universe," and has explored the topic in his classic story "The Final Question." Dave Criswell buys us a few hundred billion years by his schemes for "lifting" hydrogen magnetically from stars to shrink them into smaller, cooler, longer-lived suns.

But even more optimistically, Professor Steven Frautschi, a physicist at Caltech, thinks there may still be hope for an infinite future. ("Entropy in an Expanding Universe," Steven Frontschi, *Science*, Vol. 217, No. 4560, 13 August 1982.)

As physicists like Clausius and Boltzmann, cosmologists explained a century ago, a closed, finite universe inevitably reaches a state of maximum entropy, maximum disorder. According to the second law of thermodynamics, hell freezes over. The stars are cold black cinders. Planets bare of life drift in meaningless orbits. Ashes to ashes, dust to dust. Not exactly a pleasant prospect for those whose faith in immortality is crushed by the ultimately lifeless purposeless run-down-clock cosmos.

Late 20th century physics gives us a far more bizarre cosmos.

The heat death model is expounded in the science fiction of Wells' **Time Machine**, Asimov's "Final Question" and Stapledon's **Star Maker**. The new model that follows, based on the brilliant scientific results of S.W. Hawking, J.D. Bekenstein, P.C.W. Davies, and F. Dyson, is explored fictionally in my science fiction trilogy in progress—**Lords of the Lepton**, **Masters of the Meson**, and **The Hyperon Hierarchy**.

The Black Hole Era

The first difference between modern theory and the traditional model is that the universe is not static but is expanding without limit. This is the so-called open or critical Friedman model. The second difference is that there are black holes.

For some early speculations on how advanced interstellar civilizations could use black holes for energy, communication, and transportation, I urge you to read my article "Star Power for Supersocieties" in the April 1980 issue of *Omni* magazine. This article, by the way, was the first popular-press nonfiction piece to predict that we would find a giant black hole at the center of our galaxy.

As Bekenstein and Hawking discovered, black holes can change the way entropy spreads through the universe. As Davies and Dyson deduced, this radically changes our understanding of the ultra-long-lived cosmos.

When a body meets a body, coming through the sky, the two merge to become a single one, as entropy and gravity dictate, when the bodies are black holes. And most bodies will become black holes eventually.

For a hundred billion years (10^{11}) there is still prime real estate in the universe. Some stars die, but others continue the process of nucleosynthesis, turning primordial hydrogen and helium into the stuff of life. Carbon, oxygen, nitrogen, phosphorus, sulfur... all the elements needed to build human beings. And silicon, germanium, copper, iron—the elements needed to build computers, robots, and spaceships.

For another hundred billion years (10^{11}) the dramas of hyper-history will be played out on a stage of stars decaying into black holes. Human super-societies will warm their hands by the energy of stellar death.

Over the vastly greater time scale of a hundred quintillion years (10^{20}), the galaxies become quasars, sucked into huge central black holes. Radiation is fierce, so civilizations migrate away from the dying galaxies as wisps of stars, planets, rocks, dust, gas, and spaceships.

After another hundred quintillion years (10^{20}) the galaxies and galactic black holes and clusters of galaxies and even super clusters of galaxies almost all fall into super-cluster-mass black holes.

This process of black hole fusion, or black hole hierarchical aggregation, is not just an endless chain of catastrophes and super-catastrophes. It is also the ultimate power supply for civilizations on their unimaginable journeyings.

As Steven Frautschi puts it: "life based on solid matter [us and our computers] must continually search out and bring together more matter. This requires energy ... a sufficiently resourceful intelligence inhabiting a critical universe learns how to move black holes, bringing them together from increasingly widely separated locations and merging them to increase the entropy. The region from which the black holes are collected ... I will call the empire... "

The Era of QUANTUM Tunneling

A challenge comes to the empire in a nonillion years (10^{30}) if protons (and all solid matter) decay. As Hamlet puts it: "oh, that this too too solid flesh could melt..."

If life outlives the decaying proton, or if protons don't decay after all (we're not sure which), there are still new threats and possibilities. Over 10^{65} years, all solid matter undergoes liquid flow, as heavier elements quantum-tunnel through the lighter elements. That is to say, if a heavy atom (say copper) happens to be just above a lighter atom (say oxygen), sooner or later the copper atom will spontaneously switch places with the oxygen atom, so as to reach a lower gravitational potential. Everything runs downhill, and no dam can stop this flow forever.

Our bones, the migrating spaceships, the last surviving robots of dawn will melt and slump and transform into recycled quasi-planets with iron cores and slagged computer crusts.

After a million googol years (10^{106}) the black holes all evaporate away. Life, should it survive into this inconceivably ancient universe, would observe that any piece of matter, left alone for ten quadrillion googol years (10^{116}) alchemically transmutes itself to iron. Quantum-mechanical tunneling eventually allows any nuclei to spontaneously fission or fuse to stable iron.

The penultimate age of silicon steels away to the ultimate age of iron. As Spider Robinson has observed, due to the extent of irony in the cosmos, "God is an iron."

The Era of Black Hole Recycling

Eventually the universe acts out its life in re-creation of its black hole babyhood.

After a length of time which is so long that the preceding time scales are mere instants (10 to the 10 to the 26th years), matter as we know it has almost entirely disappeared into black holes. Not by cycles of falling and aggregation, but by quantum tunneling. Each object will fall into its own center of mass and turn to a black hole.

That time span, by the way, would be written out in years as the digit 1 followed by 10^{26} zeros. If you wrote this out on a strip of paper at one zero per centimeter, the number would extend roughly one million light years beyond our galaxy. The number represented by this monstrous string of digits far exceeds the number of elementary particles in the universe, or any other materially appreciable quantity. But that's the way things work in probability theory. Just as it takes on the order of 10^{65} years for the iron atoms in your hemoglobin to spontaneously tunnel down to your feet, it would take astonishingly longer for every atom in your body to spontaneously tunnel inside the Schwartzchild radius of the event horizon that encompasses the black hole you could become.

So what goes up must come down. But then, what comes down must go up again. Eventually all the black holes evaporate again by Hawking radiation. The universe approaches a new kind of heat death. Most matter has now been cycled through black holes and become an ambiplasma of electrons and anti-matter positrons. But wait! Asimov's robots have positronic brains. Perhaps there's hope after all.

Steven Frautschi believes that truth may follow fiction. To conclude this glimpse into the far-out future, let us take heart from his conclusion which is reminiscent of the intelligent dustclouds of Fred Hoyle's novel **The Black Cloud**:

"Although we have failed to find a viable scheme for preserving life based on solid structures, other forms of organization may be possible, as emphasized by Dyson. It stands as a challenge for the future to find

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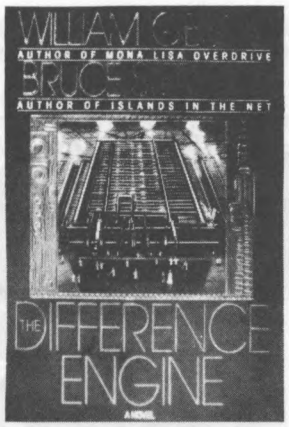


REVIEWS
BOOKS, ETC.

THE DIFFERENCE ENGINE by William Gibson and Bruce Sterling (Bantam Spectra, 1991, 429 pp., $19.95; ISBN 0-553-07028-2)
Reviewed by Doug Fratz

The Difference Engine is the long-awaited collaboration between William Gibson and Bruce Sterling—the heart and brains of the now somewhat passe cyberpunk movement—wherein the dynamic duo leap boldly into their newly-created SF subgenre: steampunk. And for a novel that carries with it so much baggage in terms of expectations, it makes for a surprisingly good show.

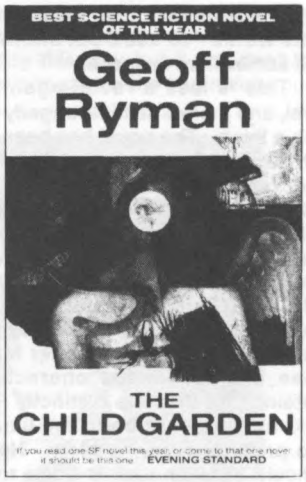
The novel is set in 1855 in an alternative 19th century where England is more than thirty years into the rapid rise to political power of a party of pro-technology "industrial radicals" who routed the Luddites and have supercharged Western Europe's industrial revolution. This has led to the evolution of a new social order where scientific realism has replaced religious philosophies, and scientists and technocrats are the leaders of society. The most important technological breakthrough is that Charles Babbage succeeded in building his mechanical computing machine (the difference engine of thee title), and the monstrous steam-powered machines (which—surprise!—work almost *exactly* like today's binary digital computers) have brought on the age of information more than a century early. (Scientifically speaking, the main reason this never happened is that what Gibson and Sterling have these huge difference engines accomplishing—scanning the records of the entire population of London in just a few minutes—would require computation speeds at the very least in the megahertz range, i.e. millions of computations per second, which is impossible for large mechanical computers due to basic limitations of physics. A real difference engine would work thousands or even millions of times too slow to be of use in saving and retrieving information.)

There can be no doubt, however, that Gibson and Sterling have created a marvelously detailed and fascinating word here. It's a world that is filled with plots, intrigues, secret societies, radical political groups, and environmental pollution and its related illnesses (as technology surges far ahead of the medical sciences) to an even greater extent than the *real* 19th century. The world of steampunk created here indeed exhibits a more tangible verisimilitude than the mid-21st century world of cyberpunk. The radical political intrigues, global conspiracies, downtrodden urban masses, rampant pollution, decayed environment, and ruthless industrialists that are the primary components of both steampunk and cyberpunk are actually more believable as part of the 19th century than the 21st.

I haven't yet mentioned the plot or characters; in actuality, they seem designed primarily to provide a vehicle for showing off Gibson and Sterling's fascinating steampunk world. The story follows three viewpoint characters (used sequentially) to follow what is essentially a single narrative whose primary intrigue involves a deck of punch-cards (a software program) that appears to be greatly desired by some revolutionary factions. Few readers will be surprised when it is revealed what the program represents, especially since the explanation seems excessively vague, and lacking in the kind of clever details that should have been able to have been provided to the authors by almost any hacker. But despite these small caveats, the plot and characters are more than adequate, and occasionally quite inspired. (It is highly recommended, by the way, for those not intimately familiar with the 19th century, to read Eileen Gunn's very helpful "The Difference Engine Dictionary" in *Science Fiction Eye* #8 before reading the novel.)

It is interesting to note that Gibson and Sterling integrated their styles thoroughly in this book; at no point is there any indication that this is a collaboration. **The Difference Engine** is yet another collaborative SF novel that combines the strength and avoids most of the weaknesses of both authors. That this happens so often in the science fiction field is made even more remarkable by the fact that it almost *never* happens outside our field.

As a subgenre, steampunk is unlikely to have the impact or influence of cyberpunk, and it is unlikely to incite as many imitators. But as an individual novel, **The Difference Engine** is as good as any of Gibson and Sterling's past novels. It is eligible for the Hugo (but not the Nebula) for 1990 due to its British first edition last fall. If it fails to obtain a Hugo nomination this year, it will most likely be due to Bantam's unfortunate scheduling of the release of the U.S. edition, which may result in many not having read the book in time to nominate it.


BEST SCIENCE FICTION NOVEL OF THE YEAR
Geoff Ryman
THE CHILD GARDEN
If you read one SF novel this year, or come to that one novel it should be this one. EVENING STANDARD

THE CHILD GARDEN by Geoff Ryman (St. Martin's Press, 1990, 388 pp., $19.95; ISBN 0-312-05002)
Reviewed by W. Ritchie Benedict

Science fiction has always had the unique ability to take an aspect of the human condition and extrapolate upon the results followed to an extreme. In a way, it is really sociological fiction. Thus, you get societies based upon Madison Avenue running wild, the Mafia taking over the Presidency, organleggers, ecological collapse, nuclear war and feminist dictatorships. Perhaps recognition of some of these dystopias may have helped us to avoid them, as when several powerful nuclear war movies (i.e., **On The Beach**, **Testament**) were produced during times of growing international tension.

This book by a new young British writer deals with synthetic viruses, and the changes they have wrought upon an England of the 21st Century. They are used for education, to alter behavior patterns, and to create a semi-tropical London. Naturally, there is a drawback to all of this—people seldom live beyond 35 years old. This does not bother the government—a sort of socialistic dictatorship known as the Consensus. Of course, as in every dystopia, there is someone who just doesn't fit in. In this case, it is a young woman named Milena Shibush. She is resistant to the viruses that are turning everyone else purple, and in addition, she is afflicted with the ultimate Horror of Bad Grammar. She is not a success at being placed as an actress, as there is always something within that insists upon individuality.

Milena is engaged in a search for love in a society that does not know the meaning of the word. She finds it in the very strange person of Rolfa, a genetically engineered person who is a cross between a Polar bear and a woman. Rolfa was intended to work in Antarctica, splitting rocks. Having become rich through the mining of nickel, she now sings Wagner and has a taste for whiskey. Like Milena, she too is immune to the viruses, as are all the other Bear/Human hybrids.

There are a number of other singular personalities Milena encounters on her journey as a surrealistic Alice in a genetic wonderland. One of these is a holographic expert Thrawn McCartney, who is attracted to Milena. Milena must reach deep into her own past to find out what she really is and to try to understand what the Consensus has done to humanity. It has told her there are no more books, but she manages to locate a hidden library. She marries Mike Stone, an astronaut, even though her heart isn't in it. The Consensus, not content with reconfigur-

ing the human race, has another larger plan in the works—to seek out another form of itself somewhere in space.

This is less a revolt-against-tyranny novel, and more a satirical tragedy—if there is such a thing. The novel has been compared with Samuel R. Delany and J. G. Ballard by other reviewers. It strikes me as more of a fusion between Cordwainer Smith and the far-future landscapes of Michael Coney. It is a very detailed picture of a time and place as alien to us as another planet. Winner of the Arthur C. Clarke and John W. Campbell awards for Best Novel already, it is very likely a 1991 Hugo contender for its lyrical prose and marvelous characterizations. Certainly, it reflects a distinctly British outlook, and may not be to the liking of fans who prefer fast-moving plots. Nevertheless, it should be taken a bit at a time to absorb all of the atmospherics. **The Child Garden** is quite fascinating, and maintains a high literary standard throughout.

PACIFIC EDGE by Kim Stanley Robinson (Tor, 1990, 320 pp., $18.95; ISBN 0-312-85097-2)
Reviewed by Doug Fratz

With **Pacific Edge**, Kim Stanley Robinson completes his *Orange County Trilogy*. In the first novel, **The Wild Shore**, a 1984 Ace Special that established him as one of the best new writers in the field, Robinson used a relatively pastoral post-nuclear-war Southern California as background to a heart-warming and sense-of-wonder-filled coming-of-age story. In **The Gold Coast**, published in 1984, he presented an over-crowded, urban, high-tech Orange County dominated by defense contractors and designer drugs. With **Pacific Edge**, Robinson presents a highly ambitious novel that obviously represents his personal vision of a practical utopia.

Like the first two books, **Pacific Edge** takes place more than fifty years in the future. It is set in the small town of El Moderna, some years after the establishment of a new world order based on a unique mix of ecology awareness, appropriate technologies, personal freedom, institutionalized community responsibility, and cultural tolerance. The protagonist is a likable home remodeler, and resident of El Moderna, named Kevin.

The general cultural ambience of El Moderna seems most like (based on my own experience) a college campus from the early 1970s with everyone matured by about a decade. Virtually all of the characters in Robinson's El Moderna appear to be in their late 20s or early 30s. The only exception is Kevin's grandfather, who played a role in helping bring about the new world order some years before, but then retired to live a hermit-like existence before becoming Kevin's sage political advisor when the time comes. (One wonders what happened to the 40- to 60-year-olds who form the power structure in the vast majority of modern societies. Kevin's parents are "in space" and he never hears from them or thinks of them very often; it is not clear where everyone else's parents are.)

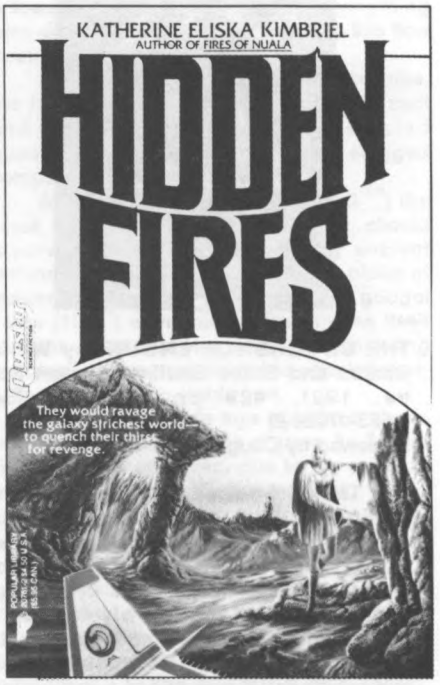
The most basic concerns and emotional insecurities of the characters also mirror memories of my college days. Everyone is at heart an intellectual, no matter what their vocation, with a love of learning and a penchant for introspection. All of the characters exhibit great tolerance on an intellectual level, but often react emotionally in a somewhat immature manner. At times, Robinson appears to acknowledge this unusual tendency, such as when, after he has Kevin, who is (I believe) in his early 30s, realize that he was in love for the very first time, and experiencing all the emotional upheavals this generally entails, he resorts to an extended auctorial explanation acknowledging how unusual it all is.

The primary plot follows the struggle of the protagonist and his friends to prevent the development of the last acreage of undeveloped land in El Moderna. This may not seem like a very substantial or meaningful plotline, I suppose, for readers who have never experienced a moment of mystic awe while totally alone in an untouched wilderness, but it serves its purposes very well in this novel. Various subplots include complications involving Kevin's aforementioned first love, his softball hitting streak, and various aspects of life in El Moderna. Several viewpoint characters are used quite effectively.

But neither the plot nor the characters are the stars of **Pacific Edge**. The most fascinating thing here is Robinson's new world order. It features a novel mix of individual freedom, environmental protection, and both capitalist and socialist economic principles. Robinson's town of El Moderna is fascinating in its organization and operation. It appears to function as a cooperatively-owned corporation in which everyone is both owner and worker. People own shares upon which annual dividends are paid, and are required also to fulfill requirements for community service. Physical as well as intellectual fitness is a common interest, and most residents exhibit an almost Heinleinian competency to do (and pride in doing) virtually any job. In some ways, it reminds me of a more humanist, more left-wing version of Bruce Sterling's future corporation in **Islands in the Net**. Robinson has made a creditable attempt to merge the best concepts of the '60s, '70s and '80s in designing this new society.

If there is one disappointing aspect of this book, it is that there is too little shown of this new world order, especially the bigger world beyond El Moderna, and many questions are therefore left unanswered. Robinson gives us a fascinating glimpse of his world, but he left me wanting to know more.

But what *is* here makes this one of the most important novels of 1990. Of Robinson's three Orange Counties, this is the one I most hope he returns to again in future stories.


KATHERINE ELISKA KIMBRIEL
AUTHOR OF FIRES OF NUALA
HIDDEN FIRES
They would ravage the galaxy's richest world— to quench their thirst for revenge.

HIDDEN FIRES by Katharine Eliska Kimbriel (Questar, 1991, 277 pp. $4.50; ISBN 0-446-36129-1)
Reviewed by Ardath Mayhar

I don't read a lot of SF these days, probably because it is beginning to seem so much the same. However, when one of Katharine Kimbriel's *Nuala* books comes into my hands, I am instantly hooked. She has created, in stunning detail, a world that is remarkably alien, and yet which is inhabited by recognizable, if altered descendants of humankind.

Politics is brilliantly entangled with romance, intrigue with psychological anomalies, power with compassion. Her characters are always *human*, even the most unusual of them, and their problems are deeply rooted in their own lives and situations.

Darame (Silver Meath, as she was called in her former life) is one of Kimbriel's most interesting people. She is clever without being cold, strong without being abrasive, and she risks everything (losing her unborn child in the process) in order to prevent a calamity for Nuala and the clan Atare, of which her husband, Sheel, is the head.

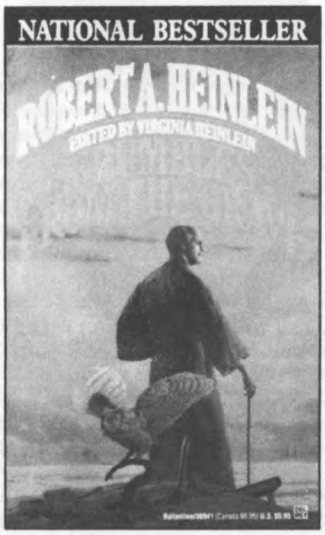
Garth Kristinsson, who might have been made into a villain, is also a fascinating study in obsession. Losing his parents as a child, he is not trained as a free-trader, which they were; they died too soon. Instead, for over century he has hunted those involved in his father's last scam, which caused his death and indirectly that of his mother.

Silver is the last left alive of the conspirators. Garth has come to Nuala to confront, and, if he finds it necessary, to kill her if her explanation of the scam-gone-wrong is not satisfactory.

The book is woven of many filaments, the principal ones those of Garth's dangerous liaison with the clan Dielaan and the efforts of Darame and her family to thwart the

effort of Rex Dielaan to destroy the Synod, which is the first successful cooperative structure among the clans of Nuala. Economics and political power plays are a vital part of the plot, but there is no lack of tense and compelling action, as well. The climactic scenes in the trinium mines are equal to any I have ever read in excitement and impact.

The resolution is satisfying, as always, and I am now waiting impatiently for still another trip into the radioactive world of Nuala and its fascinating inhabitants. Kimbriel, write another!



GRUMBLES FROM THE GRAVE by Robert A. Heinlein (Del Rey, 1990, 325 pp., $19.95; ISBN 0-345-36941-6)
Reviewed by Steven Sawicki

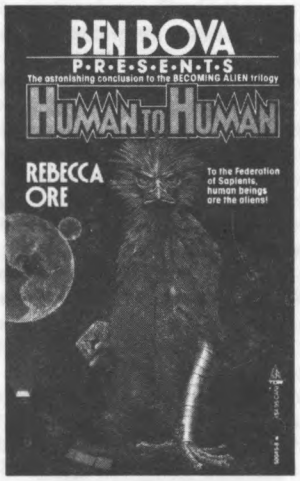
Fifteen years before his death on May 8, 1988, Robert Heinlein wrote to his agent outline a trio of books he hoped to write. One of them was to be a collection on letters and other material entitled, **"Grumbles From The Grave" by Robert A. Heinlein (Deceased).** The book was never written. In fact, none of the books outlined in the letter were written, at least not by Heinlein.

After his death, Heinlein's wife, Virginia, took upon herself the task of sorting through her husband's copious files and gathering material which would give insight into the man many credit with being the father of juvenile science fiction. The letters, mostly correspondence from Heinlein to his agent, Lurton Blessingame, cover Heinlein's career from the forties through the sixties, encompassing the early Heinlein juveniles published by Scribners, his foray out to Hollywood, the development and publication of Heinlein's adult novels and many of his personal travails and travels.

Heinlein was a very private man, rarely giving speeches or interviews—preferring to use his time to write. The genesis of this behavior is clearly spelled out in this book in Heinlein's own words.

For such a prolific author, little is known of the man that is not anecdotal. While it was hoped that his book would open the floodgates, in fact, most of the material is rather tame—related to Heinlein's business matters or to his personal life. Still, the letters give us a view into the mind of the writer whose career spanned six decades. But it is the ones which go deeper, which touch closer to home and which tap into Heinlein's personal values where the true man comes to light. Particularly in the early years where he had frequent disagreements with his editor at Scribners' over the sexual content of his novels. And yet, no matter how strongly Heinlein disagreed, he went ahead and made the requested changes—giving credence to what he often said in response to the question of why he wrote—for the money.

This book is not a biography, but rather a window into the soul and mind of one of the most important science fiction writers of our time.

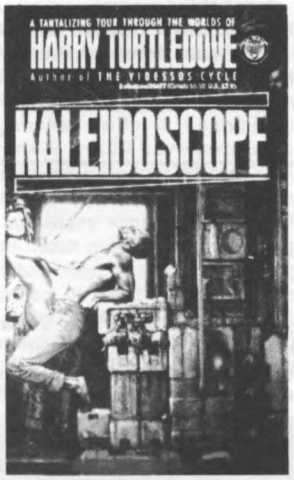

BEN BOVA
P·R·E·S·E·N·T·S
The astonishing conclusion to the BECOMING ALIEN trilogy
HUMAN TO HUMAN
REBECCA ORE
To the Federation of Sapients, human beings are the aliens!

HUMAN TO HUMAN by Rebecca Ore (Tor, 1990, 282 pp., $3.95, ISBN 0-812-50045-8)
Reviewed by Pascal J. Thomas

Tom Red-Clay gets farther and farther from his hillbilly Virginia home, and closer and closer to the human race at large, until he finally has to usher it into the Federation Sapients in this third and concluding volume of his story. But working with humans is not much easier for him than it was in the previous book (**Being Alien**), even when dealing with agents of the American government rather than primitive Karst-born Tibetans or his addict brother.

Although, as is usual with Rebecca Ore, the novel seems to jump around from episode to episode, every step brings Tom closer to his real fear: facing up to the humans who had morally cast him out as a juvenile delinquent. As the author comments herself, "his life among nonhumans is different...compared to the imaginings about it in human fiction." So safety is to be found in his new home on Karst, and not on missions to Earth, or work with non-Federation prisoners whose violence and instinct for conquest are reminders of the very shortcomings of the human race, acutely felt by Tom.

Even as his love life gets entangled with his unease over his new mission, Tom struggles on. And so do we, despite the recurrent impression that the book must have been written in Karst One—the artificial language which differentiates the sapients from the animals—and that we have not had the operation that would let us understand it. Not that Ore is stylistically muddled; on the contrary, she is the epitome of conciseness, and tosses off in a half-line concepts that other writers would rant on for pages about. If you have liked her previous novels, you should enjoy this one; but if you don't know them, it pays to start at the beginning.



KALEIDOSCOPE by Harry Turtledove (Del Rey Books, 1990, 249 pp., $3.95, ISBN 0-345-36477-5)
Reviewed by Pascal J. Thomas

Harry Turtledove reads like an **Analog** author for the 1990s. He even pays homage to his chosen SF tradition in a funny, if a bit in-groupish time travel story, "Hindsight", a main character of which is John W. Campbell (under a transparent alias.). Beyond the exaggerated clumsiness of his '50s SF writer characters when facing a 90s woman, and their naive faith in a future which has only occurred as our dreamt-for reality, lurks Turtledove's still unshaken belief in the power of reason, engineering, and science fiction as well, to point the right course for human beings.

Of course, the stories in this collection have been published in various outlets, and several are fantasy—but those mostly use the conventions of various fantastic subgenres (heroic fantasy, vampire stories) to pastiche them, sometimes with heavy-handed humor (viz., 'Condom, the Trojan', the barbarian hero of "The Boring Beast"). A couple of non-science fiction stories are also included which make points of a personal nature ("Crybaby", "The Girl Who Took Lessons"), and display the author's intimate knowledge of the Southern Californian background.

But his best material here always describes thought-experiments, designed to bring into contact extreme cases of human experience which our history has not brought together. Sometimes this is done through the time-tested device of a less-advanced alien culture ("Bluff", "The Road Not Taken"), and although some mention is always made of technological problems, the main point of both stories is made in the contrast between our thought processes and those of the (unlucky) aliens (Turtledove depicts with realism, but little remorse, the evils of culture shock).

More often, the unlikely meetings are achieved with the help of time travel, or the side-trips into parallel timelines which Turtledove has put to good use in the series that have made him famous, the *Videssos Cycle* and the *Human/Sim* stories. One such story, "And So To Bed", again exploits sharp

cognitive differences, that between humans and the missing-link Sims, but also on a higher level, that between us, with our contemporary knowledge and the alternate Samuel Pepys who stumbles onto evolution theory. A delightful morsel.

Those stories, however. lack emotional power—the issues involved are purely intellectual. The best two pieces of this collection are those which go beyond this limitation. "The Weather's Fine" is not so much about time-travel than about time dislocation (very Ballardian). The story is set in a California where weather can move people and towns through various decades from the 50s to the 80s, thanks to the mild climate of the southland, and the judicious use of time-conditioners. Although the setup fails to be completely coherent, and perhaps because of that (consider the work of Philip K. Dick), it yields a deeply moving story in which the emotional life of the protagonists sways with the chronic fronts; at the same time it offers a reflection on the patchwork of nostalgias which are spreading on our culture and airwaves.

"The Last Article" is set in an alternate history where Gandhi meets the Nazis, a confrontation so natural to hypothesize that I wonder why it was not written earlier as SF,

"STORIES UNDER MY SKIN"

Reviews of Short Fiction
by Anthony Trull

"Recycled Grandfather" by Vivian Vande Velde (*Pulphouse 6*, Winter 1990) A senile grandfather receives brain tissue harvested from an aborted fetus. Violent anger at its early murder carries over from the fetus into the grandfather. This is a controversial subject and the first SF story I can recall whose central concern is the morality of "recycling" of fetal tissue. At that, this is not a very speculative story, since at least one man has undergone an implant of fetal brain tissue as a treatment for Alzheimer's Disease. The result described here has not (reportedly) been observed in the real case. The story is a well and quickly executed horror tale that all the while makes a moral-political anti-abortion point. That the point is contrary to the beliefs of *Pulphouse*'s editor, Kristine Kathryn Rusch, and publisher, Dean Wesley Smith, is clear from Rusch's introduction. Their publishing this story is thus to their credit; it also lends credibility to *Pulphouse*'s claim to publish "dangerous" fiction.

"Life Sentences" by Nina Kiriki Hoffman (*Pulphouse 6*, Winter 1990) Here we find a secret hospital run by religious zealots where pregnant woman are held hostage until their children are born to prevent their having abortions. This repugnant extreme is the logical endpoint of an anti-abortion stance only if those who oppose abortion also abandon the rule of law. As a cautionary tale, this is effective. However, the fantastic element of this story appears with the ghosts of child suicides who were born through this hospital. The children claim they were given short-term souls and now they wander soulless, the victims of having been forcibly brought into a life they were not meant to live. Although a powerful, provocative image, this presents a philosophically untenable pro-abortion argument that depends on pre-destination and an absence of free-will.

"Dancing Holes" by Joyce Thompson (*Pulphouse 6*, Winter 1990) Nothing speculative or fantastic shows up in "Dancing Holes." I think I responded strongly to it because Thompson so accurately describes what it's like to look up, drugged, from an operating table and see the holes in the ceiling tiles begin to move. This is a story about a woman actually having an abortion and it's well-told and chilling and disconcerting. The final scene re-affirms the protagonist's abilities to comfort and, well, mother and I can't decide if it's gratuitous or not.

"The Murderer Chooses Sterility" by Bradley Denton (*Pulphouse 6*, Winter 1990) This story is sick. The main character is sick. The things he does are sick. Sick. Sick. Sick. I kinda liked this story. Actually, Bradley Denton is near to vaulting himself into that select group of writers in my mind currently consisting of only Kim Stanley Robinson and Orson Scott Card every word of whose I want to read and Soon. And the fact that he can write sympathetically of a mass-murder with "a heart of gold" suggests he's tougher and smarter than most. He's also *sick*. Declining to hold that against him, and also declining to make a big deal of the fact that there is nothing science fictional or fantastic in this story—and inclined to mention that there is an abortion clinic and a vasectomy and Arthur Cameron's (a.k.a. James Blackburn's) eleventh, twelfth and thirteenth murders in this story—I would like to mention that "The Murderer Chooses Sterility" is written with not one ounce of sentimentality. That's good. (Note: There are also twenty stores in *Pulphouse*'s sixth issue that are not about abortion. Some of them are quite good.)

"Bears Discover Fire" by Terry Bisson (*Isaac Asimov's Science Fiction Magazine*, August 1990) This is a sad story and it's a funny story, it's about death with dignity and changing flat tires and it's about bears who sit around campfires on highway medians. It's also told in a homey, deadpan voice that made me laugh a lot.

"In the Upper Cretaceous With the Summerfire Brigade" by Ian Watson (*The Magazine of Fantasy & Science Fiction*, August, 1990) If anybody ever says that science fiction is *not* off-the-wall imaginative, just give the doubter an Ian Watson story. This is a good example of making a preposterous idea the medium for genuine pathos. Here we have the depressing, ordinary professor meeting, well, a hostage situation on the regular London train eighty million years ago. Why eighty million years ago? Well if you run a train through a time tunnel its tracks don't take up room in the modern world, do they? But that's not really the point. Watson is a master at tracking human failings and worries in the midst of amazing happenings. And this is a great example.

"We Were Butterflies" by Ray Aldridge (*The Magazine of Fantasy & Science Fiction*, August, 1990) Supposing the war on drugs requires curbing a few liberties, and supposing it requires curbing a few more after that, and then we *win* the war. Will we be done looking for scapegoats? If this future ever comes to pass, this story will get Aldridge interred. If you've been through the demeaning process of a drug test, you will find a chilling plausibility to each step he describes. And quite properly, it will make your blood simmer.

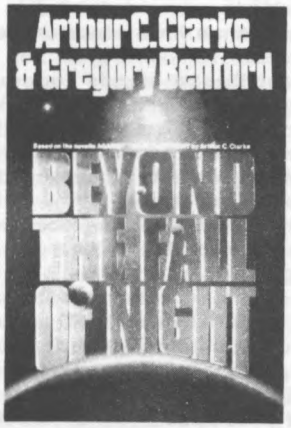
"Blunderbore" by Esther M. Friesner (*Isaac Asimov Science Fiction Magazine*, September, 1990) It would not serve this very funny story to say more than that it's about a woman in New York middle-management who places a personal ad only to have it answered by the giant of Jack and the Beanstalk fame.

"Curious Elation" by Michael Cassutt (*The Magazine of Fantasy & Science Fiction*, September, 1990) This is a hell of a good story. Jeff Kramer is an alienated, high-powered, coke-sniffing lawyer who finds himself drawn to his small hometown. Not only has Kramer turned his back on the town since leaving it, he has abandoned the Catholic upbringing and values he learned there. Yet he is drawn by guilt over the crippling of a former classmate and rival, Gary Hustad, as well as being driven by an emptiness within and an inability to answer his son's question: "Daddy, who's God?" As his isolation from human warmth becomes more and more apparent, he finds redemption through sacrifice. I doubt one needs to be a Catholic to appreciate this story, but it helps. The element of fantasy in this story is subtle and could catch one unawares at the end.

"Hollywood Kremlin" by Bruce Sterling (*The Magazine of Fantasy & Science Fiction*, October, 1990) This story is a romp. Written before the near-breakup of the Soviet Union, but prescient in its view of the collapse, Sterling takes us among smugglers in Azerbaijan as even the established smuggling operations begin to unravel amidst ethnic strife and official corruption (the party boss being the chief smuggler). Sterling's insights here (and in **Islands In The Net**) make me wonder if he may be the only one who knows where our world is going.■

perhaps in the flow of alternate-Reich stories. Never mind—this time the intellectual game is played to the fullest, while carrying heavy emotional stakes. I was engrossed.

Turtledove may need to give up some of his more forgettable bits of playful cleverness before he takes on the stature of a major writer. Meanwhile, he certainly seems a worthy continuator of the hard-core SF tradition.



BEYOND THE FALL OF NIGHT by Arthur C. Clarke and Gregory Benford (Ace/Putnam, 1990, 298pp. $19.95, ISBN 0-399-13499-9)
Reviewed by Pascal J. Thomas

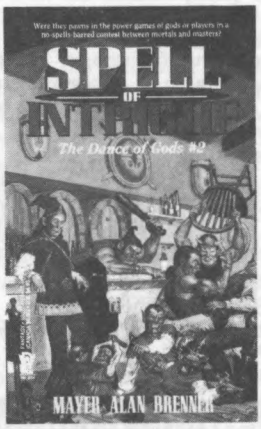
For how long can you go on with an end-of-time story? Any extension may well destroy the balance of the previous work, as sequels to other space-sweeping classics of SF have shown. This book takes off from the barren Earth and the single city of Diaspar postulated by Clarke's **Against the Fall of Night**, but soon takes its youthful protagonist Alvin past the city limits, to discover first the ecology-oriented civilization of Lys, then the immensity of interstellar space.

Dutifully, Alvin fosters better understanding between human groups and a more adventurous spirit among the hidebound citizens of Diaspar. Some cosmic revelations even come out of this, but on balance his adventures are rather boring, as he is confronted with a mostly empty Galaxy, and trivial technical problems. I was quite amused by the very trendy episode (in Chapter 11, where the copy-protection of a robot who has Secrets To Tell is removed by the simple expedient of making a unprotected copy of the whole machine, with serendipitously unearthed matter-duplication equipment. Home computers have entered the writer's universe since the original novella! But when, in more classical space opera style, a starship of gleaming metal is revealed from under the suburban sand deserts of Diaspar after a stay of geological proportions, the fact that it has not been oxidized into slag is far more astounding than the discovery itself, and the true wonder of it could have come from an (unprovided) explanation of how such persistence had been achieved. If sufficiently advanced technology will look like magic, one should at least convey the feel of that magic, and not let aeons pass as so many weeks.

Fortunately, the novel's second half takes a very different tack, starting off with a chapter titled "The Return of Evil". It seems to owe more to Benford than to Clarke, and mirrors the dialogue long used by the former, in novels such as **In the Ocean of Night**, with the tales of benevolent visitors of his British senior. A number of years have passed, the original, grungy human race has been revived, and viewpoint goes over to one of their number, a woman named Cley, and, just as in **Great Sky River**, this mankind is on the run, slaughtered by machines it does not understand.

Far more interesting to me than the details of the cosmic battles is the riot of life throughout the (reshaped) Solar System described by the authors and their mouthpiece, a gene-engineered, inscrutable, ironic raccoon (who reminds me of those of its brethren who roam the canyons of Laguna Beach, California). There is a richness of biologic invention here which goes beyond the previous physics-oriented works of Clarke or Benford, and bears a resemblance to Bruce Sterling's *Shaper/Mech* universe.

Judging from much of his track record, Benford in particular should be forbidden from writing in collaboration, no matter how spectacular the team-up. As a novel, this work fails; it goes into too many directions at once, the two halves do not weld into a whole. We are left with a number of good concepts, presumably to be further developed elsewhere, and a patchy reading experience.

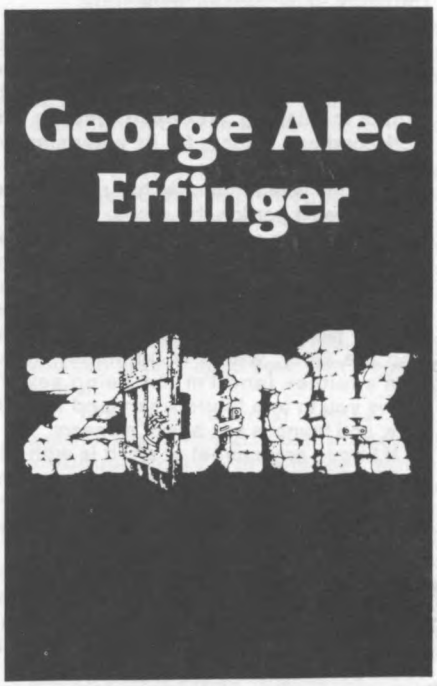


SPELL OF INTRIGUE by Mayer Alan Brenner (DAW Books 1990, 336 pp., $4.95; ISBN 0-88677-453-5)
Reviewed by Steven Sawicki

This is the second book in Brenner's humorous **The Dance of the Gods** series, and like the first, it suffers from too many characters doing too many things that are only loosely related. All this jumping around makes it difficult for the reader to become attached to any one character—and that is a shame, because Brenner has populated this world where magic is scientific with Gods who not only interact with lesser mortals, but take a direct interest through their purchasing and running of insurance companies and banks.

Spell revolves around the machinations of a revengeful God intent on bringing down one Maximilian, the Vaguely Disreputable, leader of a diverse band of adventurers. The quest involved is not really so much a quest as a delivery—moving a barge full of items downriver to Oolamouth and into the hands of Haalson Groot. The difficulty is that Groot has been imprisoned, someone is trying to sink the barge through magical means, one of Max's companions—The Creeping Sword—has become deeply embroiled in a plot of the Gods which may or may not have anything to do with Max, and a least one of Max's traveling companions is not what he seems.

Brenner writes in a quick-paced style which perfectly matches his plot twists. If the frequent jumping from character to character is disconcerting at times, the action of each quickly makes up for it. I can't help but feel that Brenner would have produced a much more enjoyable book if he had reduced the number of characters, and tossed out some of the ancillary storylines. His desire to cover so much ground in so few pages lends itself all too often to only a cursory glance or explanation of what's going on behind an action. Still, it's a book rich in people, places and complications and one which is enjoyable either by itself of in tandem with the first in the series.

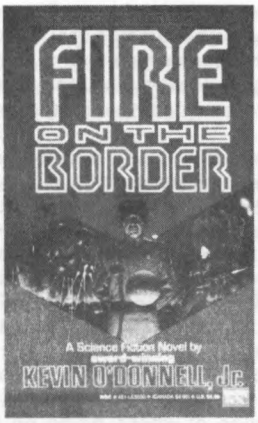


THE ZORK CHRONICLES by George Alec Effinger (Avon, 1990, 290 pp. $4.40; ISBN 0-380-75388-X)
Reviewed by Chuck Von Nordheim

Effinger pulls it off again in **The Zork Chronicles**. By all rights, this novelization of a popular computer game should have been formulaic, quest-in-a-dungeon hackwork. However, instead of just meeting the feeble expectations of the sword and sorcery crowd, Effinger has turned in a sophisticated piece of sly camp riddled with puns and wicked in-jokes. (The lead character, for example, belongs to an organization called the Supernatural and Fantastic Wayfarers Association.)

In many ways, **The Zork Chronicles** is an amplification of the author's groundbreaking first novel **What Entropy Means To Me**. Like the former work, this book often functions as a wry commentary on the archetypal patterns of high fantasy in particular and on writing in general.

Zork isn't **Lord Of The Rings**, but if you're looking for a relatively painless read with a large quantity of fun, then gather up your zorkmids and buy this book.



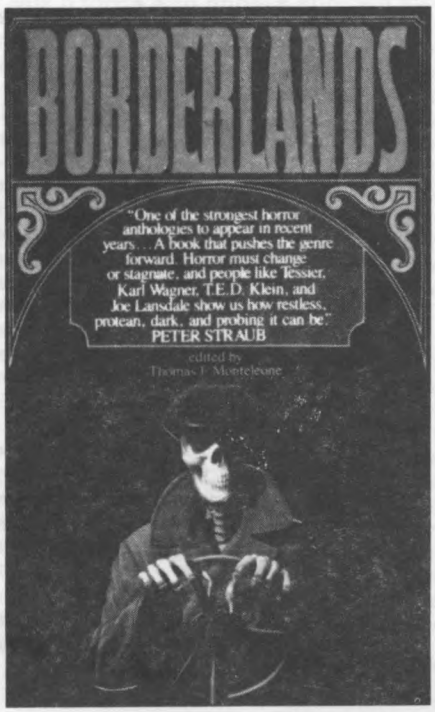
FIRE ON THE BORDER by Kevin O'Donnell, Jr. (ROC/New American Library, 1990, 368pp, $4.50; ISBN: 0-451-45030-2)
Reviewed by Sharon E. Martin

O'Donnell is a consummate stylist, and **Fire On The Border** is written with his usual flair, but most of the humor I've come to expect is missing. It doesn't lessen this work, perhaps, except for its entertainment value.

In a time when humanity has reached the stars, if you'll pardon the cliche, O'Donnell's characters have retained their ethnicity, their individuality, if you will, with all the strengths and weaknesses of Earth's races. The characters, atop their inner racial differences, are fully fleshed, alive. They breathe for you. And the story, which is ultimately about men's foibles (and I'm not being sexist), draws you in to a future when land is available, and humans are, again, pioneers.

If I have any caveat at all, it is with the detail into which O'Donnell goes when he discusses tactics. To this untrained eye, the battle tactics seem flawless, but I would just as soon have been spared some of them.

If *good* hard science fiction lures you to your reading chair, or first class writing style, you won't be disappointed. If an evening's light reading is what you're after, pick a different adventure.


BORDERLANDS
"One of the strongest horror anthologies to appear in recent years... A book that pushes the genre forward. Horror must change or stagnate, and people like Tessier, Karl Wagner, T.E.D. Klein, and Joe Lansdale show us how restless, protean, dark, and probing it can be."
PETER STRAUB
edited by
Thomas F. Monteleone

BORDERLANDS, ed. by Thomas F. Monteleone (Avon, 1990, 335 pp., $3.95, ISBN 0-380-75924-1)
Reviewed by Andrew Andrews

Borderlands accomplishes what it sets out to do—stretch the boundaries of contemporary horror, out-splatterpunk splatterpunk, out-shout the "quiet horror" of the non-splatterpunks. Taboos are taken, broken, and reformed. I am amazed at the lengths with which Monteleone went to take chances, to dig for the finest material, to—where he indicates in many of the introductions—work with the writers on revision after revision to get the collection right where he wanted it.

And he should take most of the credit. This is an editor the horror field forgot. Does anybody remember the tapestrical **Dark Stars And Other Illuminations**? (Monteleone was one of the founding fathers of "quiet horror", writing it before Charles Grant coined the term.) Or the recently reviewed **Fantasma**? Monteleone's name is even buried in the faded light-blue-in-agate type on the cover. It's a shame.

Borderlands is sometimes uplifting, sometimes repulsive. Take, for instance, "The Raw and the Cooked" by Michael Green. Disgusting, revolting, and ripe for this collection. Or "The Grass of Remembrance" by John DeChancie. Lawn-obsessed neighbors take on new meaning. I have been enjoying most, if not all, of the works from Chet Williamson. He is the finest character writer in all of horror literature. His offering, "Muscae Volitantes," is a representative example.

A standout of **Borderlands** examines what to do with the completely old and the totally disabled. "But You'll Never Follow Me" by Karl Edward Wagner confronts this highly emotional issue in a way few writers have the courage to. We get a few hard answers to some tough questions.

Borderlands may be hard to swallow, and often disturbs. But what more could you want from a collection?

KATHRYN PTACEK
Author of SHADOWEYES
"When it comes to horror fiction, Kathryn Ptacek is right up there with Straub and King" - John Coyne
The dance began one hundred years ago. It ends today.
GHOST DANCE

GHOST DANCE by Kathryn Ptacek (Tor, 1990, 306pp, $3.95, ISBN: 0-812-50878-5)
Reviewed by Sharon E. Martin

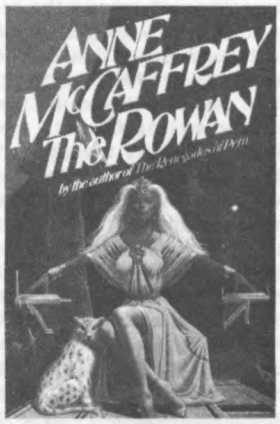
You must know before I begin that I'm drawn to anything that concerns American Indians. I could say it is because of my Cherokee blood, but I'm not sure that is the truth since my upbringing was so definitely middle-class white. Whatever the reason I am destined to like Chato Del-Klinne, Ptacek's engaging protagonist despite any flaws I can see in him. And there is a major flaw—he is too unshamanlike for an Apache shaman, too white in his thinking. That makes the book no less readable. With the exception of Hillerman, white writers are rarely able to get inside the Indian psyche, and Del-Klinne's white education makes him believable.

Ghost Dance blends supernatural suspense with true life mystery to keep the pages turning. Someone has killed Del-Klinne's friend, a fellow academic who passionately collects American Indian artifacts. So passionately did he collect that one almost wonders if his Taos-Sioux wife, Linda, isn't part of the collection. Linda is missing.

Del-Klinne, considered a suspect by the police, decides to investigate on his own to find both his friend's murderer and the missing wife. He begins with a visit to Linda's sister, Bettina. In the artist, Bettina, Ptacek gives us a heroine one would like to know on or off the page. Del-Klinne's lover, Sunny, in contrast, seems more a vehicle of Del-Klinne's personality, her passive involvement necessitated perhaps by the shaman's need to work alone.

The investigation leads to the Ghost Dance religion whose followers believe better days are coming, a time when the land will be restored to its rightful owners. What Del-Klinne almost misses, as he becomes involved in the religion, is who may really inherit the land.

Playing on the fear that each generation will be the last, and backed up by Ptacek's impeccable research, the suspense is all too real. If you want that feeling of unease after the final chapter, a feeling horror readers seem to appreciate, **Ghost Dance** will not disappoint.



THE ROWAN by Anne McCaffrey (Ace/Putnam Books, 1990, 235 pp., $19.95, ISBN 0-399-13570-7)
Reviewed by Gini Mittel

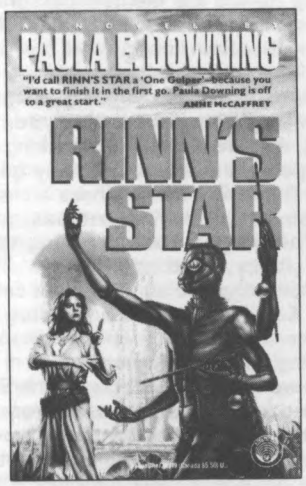
The Rowan glimpses a future when mankind not only ventures beyond the stars physically, but mentally as well; an age when ESP is considered a real and viable asset to human development, rather than the freak mishap of nature it is now thought to be (when it is considered at all). Such Talent

is measured, usually at birth, from the barely perceptible and most common T-12 to the much coveted T-1, known as Prime.

When a mudslide buries the tiny Rowan Mining Company's settlement on distant Altair, the psychic shriek of a terrorized child rouses the planet. As the sole survivor of that tragedy, the powerful three-year-old with no known family ties is henceforth called the Rowan. The lonely ward of Altair, as the clairvoyant Yegrani predicts, has a long journey of self-discovery ahead of her, and a deadly confrontation with an alien culture bent on destroying the human race.

Strangely, I find it difficult to say more without giving the entire story away. I say strangely, because, as an avid McCaffrey fan, I should first run out of paper and typewriter ribbon before beginning to describe one of her works. **The Rowan**'s characters moved more like shadows through a plot too predictable, as if more attention had been spent on the number of pages, rather than on her customary detail.

Perhaps **The Rowan** had been the work of another, less known author, or if I had never heard of Anne McCaffrey, I would have been more tolerant and accepting of this offering. But the fact remains that this *is* a novel by Anne McCaffrey. As such, **The Rowan** was disappointing.


PAULA E. DOWNING
"I'd call RINN'S STAR a 'One Gulper'—because you want to finish it in the first go. Paula Downing is off to a great start."
ANNE McCAFFREY
RINN'S STAR

RINN'S STAR by Paula E. Downing (Del Rey Books, 1990,229 pp. $3.95, ISBN 0-345-36919-x)
Reviewed by Gini Mittel

Normals and Telepaths—or, Normals *versus* Telepaths, is the order of **Rinn's Star**'s universe. And Rinn McCrea is caught, as the saying goes, betwixt and between. A telepath, she hungers for the warmth and companionship, the love, denied her by sheer accident of birth.

Desperate to escape, Rinn chooses to enter the Starfarer Enclave rather than being swallowed, literally mind and soul, by the powerful Group-Mind of her home world, Ikanos. But the Enclave had its own set of rules, dictated by eighty years worth of subservience to the (Chinese) Xin Tian, which excludes interplay with their Norman masters. The Soviet stronghold of Novy Strana offers a third alternative—annihilation for *any* telepath found within its stellar borders.

Life aboard the Chinese tradeship, Sing

----------*continued on page 33*

SOFTWARE REVIEW

by Greg Costikyan

SimEarth; The Living Planet, by Will Wright and Fred Haslam (Maxis Software, 220 pages+floppy disks, $69.95 for IBM/Tandy and MacIntosh.

Most computer games are glitzy displays of computer graphics without much intellectual depth. A small cadre of dedicated game designers, however, is devoted to changing this: Will Wright, who previously designed **SimCity**, is one of them.

The hubris of **SimEarth**'s conception is breathtaking: It proposes nothing less than the simulation of our planet's entire history, from planetary formation to the development of space colonies. And though it simulates the world only in broad brush-strokes—anything more, after all, would be impossible with anything less than a supercomputer—it is successful at providing an unusual and informative view of planetary evolution.

SimEarth is, in fact, four separate games. In the first, the "geologic time scale," one turn is 10 million years. You build continents using volcanoes and meteors, then decide how the tectonic plates drift, and run them into each other. Eventually, when things calm down a bit, life evolves, and you progress to the "evolution time scale," when one turn is 500,000 years. The first multicellular organisms appear on the planet; you try to create friendly conditions for them, partly by manipulating the atmospheric, geological, and biosphere models. "Biomes," or biogeographical regions, spread across the planet. Higher life evolves and begins to populate the biomes. Then you try to evolve your smartest species toward intelligence by giving them a comfortable environment and, when all else fails, sending down "Arthur C. Clarke's giant black monolith."

Once intelligence appears, you progress to the "civilization time scale," where one turn is 10 years. Your miserable stone age people—who might, after all, be intelligent dinosaurs or even intelligent fish—build cities and run around populating the world and fighting wars. You control them with the "civilization model," deciding what forms of energy they use and whether they devote their efforts to philosophy, which reduces the incidence of war; art, which makes them less miserable; medicine, which reduces plague; agriculture, which increases the birth rate; or science, which helps them develop the next stage of civilization. Your people progress through the bronze and iron ages, and eventually achieve industrialization.

Now begins you real problems—in the "technology time scale", where one turn is one year. Your people begin to burn fossil fuels, raising global temperature, and spread out across the world destroying biomes and causing mass extinction. Ecology across the planet is threatened. You must try to minimize the damage, while encouraging your people to develop atomic, then computer, then nanotechnology. Atomic wars or ecocatastrophe may occur, knocking you back to the stone age—or even obliterating intelligent life. But with luck, your folk develop nanotechnology and head for the stars, turning Earth back into a nature preserve.

As with Wright's previous game, **SimCity**, which dealt with urban planning, **SimEarth** allows the player to affect the simulation only indirectly; most of the time, you watch the world evolving, intervening only when you see a reason to do so. The interest of the game is not in "beating the system", but in experimenting with how minor changes—increasing solar radiation, for instance—affect the functioning of the model.

SimEarth comes with a variety of scenarios. In "The Cambrian Era", life has just begun on planet Earth. The continents in this world move as they actually have in ours, meaning you can watch continental drift in motion starting from Pangaea. "Daisyworld" is a model used by James Lovelock to explicate his Gaia hypothesis; the implementation here is mildly interesting, but does nothing to prove or disprove Lovelock's contention that Earth is, in some sense, a living creature. Special scenarios put you in charge of the United Earth project to terraform Mars or Venus. And, of course, you can always build your own world from scratch.

The game manual comes with a section that is of particular interest: "An Introduction to Earth Science", which is precisely that. It covers early planetary formation, continental drift, the atmospheric cycle, the greenhouse effect, and the origin and evolution of life. I have never seen so succinct, so accessible, or so well-written an introduction to planetary science; one is tempted to say this section is worth the price of the game alone, except that the game's price is $69.95—maybe not.

There are some irritating aspects to the political connotations of the game; Wright and Haslam (like Lovelock) seem to believe that technology will destroy the ecosystem, whereas it seems more likely that only technology can reconcile the existence of an advanced civilization with a functioning ecosystem. Greater credence is given to the notion of nuclear winter than is currently the predominant opinion among scientists. And the designers' attachment to the Gaia hypothesis is puzzling; it is accepted that life affects its environment, and vice versa, which the game shows, but the notion that the ecosystem as a whole is, in some sense, a single living entity is *not* intrinsic to the simulation, despite the designers' protestations.

But on the whole, **SimEarth** is a fascinating look at the history of the world, both natural and human, from a long-term perspective to which everyone should be exposed. And it is a demonstration that games can be high art; and can also depict and explain aspects of the world in ways that mere, unchanging text cannot.■

QUANTUM LEAPS

LETTERS

Send all letters of comment to: Thrust Publications, 8217 Langport Terrace, Gaithersburg, Maryland 20877-1134 USA. Deadline for letters for publication in QUANTUM 40 is June 15, 1991 (June 30 if submitted on 5½-inch MS-DOS floppy disk, as a ASCII or Wordstar file). All published letters earn a one-issue subscription extension.

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On receipt of *QUANTUM* 38, I read with interest Robert Marcuson's comments in the letters column about my article on the Nebula jury (*QUANTUM* 36).

Marcuson suggests that SFWA go into the publishing business, presumably to make sure that works of high-quality speculative fiction not only get published but also get an even break in the marketplace. In an editor's note following the letter, Doug Fratz asks, "Would such an effort really uncover books not now published?...Would the author be willing or able to afford what would presumably be a significant delay in having their book published while SFWA reviews the year's submissions?"

I do not believe there is a dearth of good speculative fiction in the current marketplace. On the contrary, there is probably more fine SF being written and published today than ever before in the history of the field. The genre is burgeoning—that much is clear. Unfortunately, for every good book published, there are ten or twelve mediocre (or worse) ones. The inferior work is obscuring the excellent. The effect on readers is that it's getting harder and harder to sift the worthwhile from the terrible. The odds are against anyone who tries to find outstanding work on shelves flooded with trash. This situation is not only bad for the reader; it's also terrible in the long run for the genre as a whole, because it reinforces the mainstream misconception of speculative fiction as shallow, jejune, and poorly written.

It's difficult to say whether an effort such as Marcuson describes would help much. I'm not sure it addresses the real problem. It's already reasonably easy to find publishers for good books. Very few truly excellent manuscripts go begging. The trouble is deeper and more complex than that, though it can be stated succinctly. Too much hack work is finding its way into the marketplace. After considering this situation for a couple of years, I've concluded that it's primarily an effect of supply and demand, and that to some degree, the problem is self-correcting. Up until the last year or so, public demand for speculative fiction far exceeded what the industry could comfortably supply. Under such conditions, quality naturally tended to decline, because publishers knew people were buying everything available, whether it was good or not. To put it in more concrete terms, publishers were so hungry for manuscripts that they would buy just about anything that seemed even vaguely printable. If this were any other business, the results would have been bigger advances for writers across the board, and a huge blossoming of new talent. Unfortunately, writers are generally so naive and disorganized and publishers so powerful and entrenched, that most of the profits from this boom have gone into the pockets of industry holding companies and a handful of big-name authors.

The situation is self-correcting (and we see it happening right now—a slump in sales and a general tightening in the market) because readers eventually get tired of bringing home book after likely looking book that turns out to be so awful it's impossible to finish, let alone enjoy. This probably sounds like an odd statement, coming from someone with the genre's best interests at heart: but I believe, and fervently hope, that we will soon see a precipitous drop in the number of SF titles published each year. Let's just keep our fingers crossed and pray that the industry cuts those titles from twenty-book series, franchise universe operations, and novelizations—and not from the ranks of the brilliant and original.

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Chuq Von Rospach's letter in *QUANTUM* 37 did an excellent job of spelling out recent changes in the Nebula Award Jury. But he was mistaken in his surmise that this year was the first time a number of jurors volunteered for a second term. To say so is to overlook the contribution made by the late, sadly missed Terry Carr and his fellow stalwart Gardner Dozois.

Back when Terry was alive, and Gardner hadn't yet become editor of *Asimov's*, they were the Jury's mainstays. Year in and year out they read prodigiously and shared their opinions in massively comprehensive letters that yet managed to be witty. Being on the Jury in those days was an education.

But they were not the only Jurors to serve consecutive terms. Pat Cadigan put in at least two years running, one as Chair. Michael Cassutt put in two years, and 1991 will be Marilyn Holt's third year in a row on the Short Jury. These names are just off the top of my head. For that matter, I've served on several Juries myself, sometimes consecutively, sometimes not.

What Chuq was too modest to mention was that if being on one of the two 1990 Juries was pleasanter than before, much of the credit belongs to him. By taking on himself the onerous task of requesting copies of books and magazines from their publishers, he freed up a lot of time that could be better spend reading and analyzing. As a result this will probably be the best-covered year ever. I can't speak for the Novel Jury, but it looks pretty certain the Short Fiction Jury will cover the field almost completely. It is of course impossible to read absolutely every science fiction, fantasy or horror story published in North America in the year. But there sure as hell can't be many we've missed.

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I read Andrew Weiner's article "Realism" with interest and appreciation. We folk writing literature inspired by science need not be ashamed at our origins. But I stopped nodding toward the last few paragraphs. I was surprised, not by his dislike of most fantasy other than urban (and our favorite subset) but by his dismissal of wizards, etc.

I won't argue Tolkien with you, Andrew—either he works for you, or he doesn't. And we shouldn't be talking about the 90 percent that is junk in any genre of writing. But if you dismiss these archetypes, you dismiss Le Guin's Earthsea, and its powerful images about coming of age, responsibility, death; Walton's Mabinogi, which still provokes shivers when called to mind; Kay's Tigana, addressing what happens to a society when someone or something obliterates its very name.

As we watch the collapse of the Eastern Bloc, and age-old tensions suppressed for two generations rising to the surface, can you really say that the death and resurrection of a people doesn't say a lot about someone's life in the late 20th century? And there are so many more worthy of mention.

If the mapmaker fails to entice you down the path, so be it. But I think Weiner weakens what was otherwise a quite decent commentary on Realism in general when he fails to ask others what Truths they bring back from such places as Middle-earth.

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QUANTUM 38 has been the most engaging issue in a long time. I enjoyed the interview with Connie Willis. I met her very briefly at Chimera last year and was gratified to find her as ebullient and without pretense in person as she seems to be in interviews.

I was also gratified to see Jeremiah Patrick Reilly's lengthy appreciation of the Panshins' book. I considered **The World Beyond the Hill** the best piece of scholarship done in the field, without qualification, and I was surprised that most of the science fiction press gave it the briefest of considera-

tions, some of the reviewers referring to it as a "revisionist" history, as if this term were enough to diminish the book's value. A "revisionist" history, I presume, is a work that does not support one's personal prejudices. How does one utilize previously ungathered information on a subject and not "revise" history? We know more about Chaucer today than we did in Dryden's time. Yet, if I were to contradict Dryden's opinions of Chaucer, would that be "revisionist" criticism? It represents the sort of thinking voiced by people who learned their literary vocabulary in Political Science classes and their politics in English Lit courses. I do consider the book's first part the sketchiest and somewhat oversimplified, the 17th century not necessarily being such a clear dividing line between ages of "spirit" and "reason." (I would hate to make a case that we've yet reached an Age of Reason—reason is not really a part of our native equipment, certainly not as much as we'd like to think it is.) But the point is made, and it does no harm to the thesis established in the second and third parts of the book, where the Panshins' scholarship proves truly outstanding. They may present some novel views concerning the work of Van Vogt and others, but they have every scrap and document there to make their opinions at least worth noting.

I'm certain there are plenty of hungry scholars out there already yapping at the Panshins' heels, but I certainly wouldn't dismiss their objections as "revisionist" (though they will have much of their homework already done for them) when they make them. The recent *Extrapolation* has a review of a John Huntington book that presents the opinion that "The Cold Equations" is a "misogynist fantasy," which may prove that we can over-measure our rhetoric to the point where we forget how to speak. But who knows? Mr. Hutchinson may have done his homework too.

Andrew Weiner's essay is a worthy entry in an absurd debate which threatens to descend into schoolyard professions of ball-team loyalties. I would think—at least hope—that our writers are more concerned with the building of their fictional worlds than with the question of whether those worlds fit into one roughly sketched category or another. I appreciate Weiner's sensible response.

I am assuming that Kim Stanley Robinson's piece on Shepard was a tongue-in-cheek lampoon of those literary derelicts who believe they honor an author by imitating his or her characters, because it said nothing of interest about the works of Lucius Shepard. The information on Michael P. Kube-McDowell was interesting even though the profile read like a press release. All of the columns were good, and I appreciate the reviews of short fiction, but I hope this talk about "minimalism"—the eighties equivalent of the leisure suit—in SF is just a product of my blurry vision.

[It seems obvious to me that the kid in "The Cold Equations" was chosen by the author to be female to maximize reader sympathy, and to better keep the reader expecting that the spacecraft pilot might find a way to chivalrously sacrifice himself. I can't think of any way to see that story in terms of "misogynist fantasy." - DDF]

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This wrangling over the difference between science fiction and fantasy is a lot of sound and fury signifying nothing. In "Letters to a Critic," Chip Delany cut through a similar disputation over the definition of SF by concluding that SF was basically a distributor's marketing category.

Using Delany's reasoning, we can deduce that, since SF and fantasy are marketed together and appear to sell equally well, there is no practical reason to distinguish between the two. Thus, when Dennis McKiernan's *Iron Tower* trilogy is mislabeled by the publisher as SF, there's no harm done since fantasy and SF are lumped together in the bookstores, and a simple perusal of the cover blurbs will tell the reader that McKiernan's books are fantasy.

During the '60s, when Phil Dick's **Time Out of Joint** was sold as "a novel of menace" and Vonnegut disclaimed the SF label, this also had to do with marketing strategy since SF and fantasy novels at that time were not considered to have best-seller potential, a theory exploded in the past 20 years with the success of novels by Clarke, Asimov, Heinlein and others.

Back in the fifties, there was a valid reason to distinguish between fantasy and SF, for, after the failure of **Well of the Unicorn** and **Witches Three**, fantasy novels were then considered to be box-office poison. Writers such as Marion Bradley and Andre Norton had to wait until the sixties before they could commercially market their science-fantasy novels.

A century ago, there was a similar wrangling over the respective merits of the realistic novel and the romance. In his introduction to **The Goddess of Atvatabar**, Julian Hawthorne concluded that there was room for both realism and romance in literature; that "these two ways of searching out truth should supplement each other." SF has often been likened to the realistic novel, and fantasy to the romance, but in reality a SF or fantasy novel can be realistic or romantic, and the two are often combined in science-fantasy novels.

Both SF and fantasy use the "willing suspension of disbelief" to hook the reader. When Olaf Stapledon advised (in a letter to John Gloag, quoted in **First One and Twenty**) that the SF writer could go beyond the accepted conditions of space and time "as long as he does not actually or flagrantly violate them, and so become implausible or even positively incredible," he was basically saying the same thing that Tolkien was telling the fantasy writer in "On Fairy Stories" when he said that the creation of a secondary world requires an adherence to an inner consistency within that world.

One might generalize that fantasy novels usually employ the use of rediscovery of something old, such as a lost race or an enchanted sword, while conversely SF novels employ the use or discovery of something new, such as a biological or technological breakthrough, or the discovery of an alien race. However, both genres use pity, fear or awe to arouse catharsis and wonder in the readers, and both arise from the writer's dissatisfaction with his present time and place.

Therefore, the difference between SF and fantasy are more than counterbalanced by their similar techniques, similar aims, and similar economic presentation (and readership). This makes the dissection of SF versus fantasy about as meaningful as the beer advertisement that compares "tastes great" with "less filling."

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I'm going to jump into the science fiction versus fantasy debate by commenting on Andrew Weiner's article in *QUANTUM* 38. Weiner makes some excellent points. In particular, he observes that limiting the "science fiction" label to works of obvious scientific plausibility leaves a very small field indeed. This isn't true just now, when cheap fantasy threatens to overrun the field of non-mimetic fiction, but has been so since before "fantasy" became a genre. Remember that Hugo Gernsback claimed in the mid-sixties that only one of the Hugo-winning stories to that time was SF by his definition.

Jules Verne was of course correct when he stated that Wells' cavorite was pure fabrication. But I hope it's obvious that any definition of SF that excludes Wells is meaningless. Wells was not concerned with the exact technological details of space travel, but in the human consequences should it occur. That's also the point of C.S. Lewis' **Out of the Silent Planet** (which Weiner is sufficiently uneasy about to prefer to call "science fantasy"), as well as such traditional hard-SF stories as Poul Anderson's **Tau Zero**.

Insistence on utter scientific plausibility is one of those pointless "holier than thou" games. All right, cavorite was a fabrication. But space travel is reality—something not everyone would have admitted a hundred years ago. (Even today a few people think the moon landings were faked.)

The content of science not only changes, its boundaries are fuzzy, and it's those fuzzy zones, where knowledge is speculative, that fiction can help us explore. And Verne's cannon would have been no more successful at getting people to the moon than an anti-gravity device would be. I believe Isaac Asimov pointed that out in a long-ago science column. Verne's space travelers would have been squashed and splattered. Where's the scientific plausibility here? On that count, "Road Runner" cartoons are better SF than Jules Verne. He was faking it as much as Wells was. His only argument was that cannons of some sort actually existed. Admirers of Verne's predictive ability today are more impressed that he set his space launch in Florida than with the form of propulsion.

As a fantasy reader, what most annoys me about the fantasy-bashing done by some SF advocates is their tendency to judge fantasy by its stereotypes and worst authors. There is some fairness to this, insofar as bad fantasy is currently a worse problem than bad SF. Gernsback is dead, and *Analog* under Stanley Schmidt seems to have dropped off the critical map. But many critics still believe that certain writers whom I will not name are good authors. There's some justification for criticizing fantasy, but it's unfair to judge it by its worst examples.

Weiner does a little of that when he says, "I just can't summon much interest in wizards, elves, princesses, Amazons, barbarians or magic amulets." I can't either—not as such, baldly listed like that—yet I read high fantasy. I'm not interested in watching fantasy stories displaying gimmicks any more than I am in SF stories doing the same thing. What I'm interested in is how the author uses the gimmick to say something meaningful.

Here's a test of my point. No fantasy trope has been more misused than the unicorn. Read **Unicorn Mountain** by Michael Bishop (a self-proclaimed SF author who has "deserted to the enemy"), and see what a good author can make of it.

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I must confess that I find it curious, even annoying, when so-called intelligent people equate science fiction with fantasy. While I have nothing at all against good fantasy, this sort of thinking reminds me somehow of certain pronouncements made by the Catholic Church at around the time of Galileo. All that these people really end up doing, it seems to me, is show their almost complete ignorance of the facts, not even to mention a sorry lack of scientific perspective and imagination. Let me explain.

But first, let's clear up one thing about the term "science fiction." What this designation makes quite clear about a literary work is that here is a work of fiction, that all the characters and events portrayed are fictional, and any resemblance to real people, or, in this case, real science, is purely coincidental. Having said this, let me now with a clear conscience offer rebuttal to Andrew Weiner's "fuller list" of eight "implausible SF tropes" as enumerated in *QUANTUM* 38.

1. FTL Travel. Physicists have speculated quite seriously for years on the existence of certain particles that do, or must, travel faster than light. It is said that the force of the Big Bang was the propeller for these particles. You can't really have it both ways: either FTL speed is possible or it's impossible. Now, while I admit that the probability of our space cars achieving this kind of speed by, say, the year 2021 is rather small, they key word here is "probability," as opposed to "impossibility." What about by the year 2291, though? Mmmm, I'd still say—forget it. But then, what if we square one of these numbers? (Ah, Time—the smell of it.) Gosh!

2. Time Travel. Impossible? I'm afraid this one's already an established fact. Granted, our time machines are very crude indeed, capable of going into the future only a few hours, perhaps, but time travel nevertheless. Where are these time machines? Check out Cape Canaveral or the Soviet Cosmodrome. Hey, it's a beginning. But then, you can't really expect to punch out Ferrari Testarosas until you've gone through the Model-T stage, can you?

3. Aliens Traveling FTL. I know we haven't seen any aliens yet (or, at least I haven't), but since we assume via the "I think therefore I am" theory, that this planet holds reasonably intelligent life, and that there are "billions and billions" of suns out there in our Milky Way, not to mention "billions and billions" of galaxies, and when you look at how far we've come technologically in the last four or five hundred years, and then you imagine one or a million of these other "intelligent" planets with maybe a few hundred million years head start on us...

4. Parapsychological (PSI) Powers. C'mon, Andy, I'm disappointed in you. What do you think American and Soviet researchers are spending millions on? (If you haven't heard, I ain't tellin'.) You should also check out some of the work being done at Princeton and Stanford in this area.

5. Travel to other Dimensions. You won't read about the existence of other dimensions in *Popular Mechanics*, but try something a little more advanced, mathematically speaking, that is. Once again, just because we can't "see" other dimensions, it don't mean they ain't there. As for "traveling" in them, I think it's safe to say that the mathematical genius who discovers this handle will not be an American—alien, more likely.

6. Interstellar War via FTL. We've dealt with FTL already (see No. 1), but since we're in the business now of combining elements of "impossibility" to create new "impossibilities," let me do the same: Check out any one or combination of numbers 2, 3, 4 and 5.

7. Immortality. Since not even the universe is "immortal," I assume Weiner means living a very long time. Hey, we've only been boiling water for a little more or less than a hundred years, for god's sake (germs, you know—just couldn't see 'em). We haven't even found a cure for disease yet. It's interesting to notice, though, that sharks are purported to live for hundreds, perhaps even thousands of years. When the medical world starts encouraging creative thought and experimentation, we'll find out why.

8. Invisibility. I'll leave this one to the magicians. The "Amazing Randi," I understand, is quite good. I've heard it's done with smoke and mirrors. By the way, did you know that a supersonic jet's wings seem to disappear when it dives at a certain angle? Some have probably called them UFOs (there's a moral for us here, I think).

Let's not hear any more of the "science fiction is really just so much fantasy" nonsense.

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Nancy Collins' pro-abortion letter in *QUANTUM* 38 has prompted me to reply. The problem with the right-to-lifers is that they don't go far enough. All parasitic growths should have a legislatively protected right to life. Eliminating the wanton slaughter of cancerous tumors alone will save billions of dollars a year in medical costs, to say nothing of bailing out the financially ailing Social Security program. And if some poor waif ends up performing home surgery on her cancerous lung using a pair of pinking shears, maybe it'll help undermine the tobacco lobby.

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Andrew Weiner seems awfully conservative in his ideas about things science will or will not accomplish in the future. When I was a boy, science told us that it's impossible for one element to change into another element, life was a possibility on Venus, humans can't endure the strain of a spaceship gaining enough momentum to travel to the Moon or other planets, the speed of sound was a barrier aircraft might never go beyond, and a chest X-ray every year was recommended for preventive purposes.

Ideas have changed during my lifetime. Of the eight items on Andrew's list, I think immortality, invisibility, and PSI powers are quite capable of turning into scientific reality within the next century or two. Time travel has already been accomplished by astronauts who spent enough time in orbit to move into the future by several seconds.

I like the long, thorough review by Jeremiah Patrick Reilly of **The World Beyond the Hill**. However, I have no patience with this "myth" cliche which bobs up in almost every scholarly work about science fiction nowadays. I can't imagine how anyone could consider SF to be modern mythology.

Myth up to now has been a nation's or a people's widely disseminated notions about past events, usually by superhuman or godlike individuals who never existed in reality, doing coherent things. SF has been an obscure subdivision of literature which until recent years has had readerships averaging in five figures, compared to the seven-figure or eight-figure readership of mystery fiction or romance fiction, it isn't coherent because every author has a different idea about how things are going to be, and it's about the future, not the past. Besides, it has come from several nations and reflected those particular nation's natures until recent years, when it's begun to come from dozens of nations and has become even more disparate in *weltanschaung*. A writer might feel fashionable to refer to modern mythology when writing about SF, because everyone else is doing it, but it's hardly any more meaningful than describing every street light post and telephone pole as a phallic symbol.

Fannish memories are short. It wasn't too many years ago that one fan after another was writing in fanzines about how it was more important to spend government money on poverty programs than to finance the space program with it. Now all of a sudden it's only the Presidents and a few other politicians who are blamed in fanzines for failure to support the space program.

[The term "myth" appears to be used to describe a number of slightly different things. The traditional usage refers to fantasy stories presented by some cultures to its citizens as past history (*e.g.*, Greek, Roman, Norse, etc. mythology). In our culture it usually refers to things that are b believed to be true even though they aren't. The Panshins' usage seems to refer to that set of stories, characters, and objects that reflect the commonly held beliefs of a culture. Since the beliefs in the Age of Reason are centered primarily around science and technology, the cliches of science fiction form the mythological base of our culture. The concept makes some sense, if I understand this meaning of the term "myth" correctly... - DDF]

WE ALSO HEARD FROM:

Danny O'Dare, who can't wait to read Dan Simmons' **The Fall of Hyperion**, and disagrees with Dick Geis' negative assessment of Phil Dick's mainstream novels...

Jeremiah Patrick Reilly, who noted the egotistical side to the Asimov quote in the advertisement for **The World Beyond the Hill** that Asimov expects to read "over and over for the rest of my life" a book that mentions him repeatedly throughout at least a quarter of the book...

Robert Kennedy, who notes (regarding Mike Bishop's column) that Emperor Hirohito did not *personally* sign surrender terms on the U.S.S. Missouri in Tokyo Bay, and (regarding Nancy Collins' letter) that an illegal abortion at $150-$250 would be a good price, considering that they cost $200-$300 in the 1950s...■

REVIEWS *(continued from page 29)*

Fa, has its drawbacks for Starfarer Rinn, considered subhuman by her crewmates, shunned and ever despised. Yet the "freedom" of the stars almost makes up for any lack in the tender mercies. Then on a routine mission, Sing Fa is attacked by the very natives of Delta Bootis with whom the Chinese wish to begin trade negotiations. It does not matter that Rinn tried to warn the captain. As the Starfarer assigned to that ship, Rinn is held responsible for Sing Fa's destruction and the murder of her crew—but only if she can manage to depart Delta Bootis and return to Xin Tian to stand trial. Worse, the only other ship in the quadrant is a Soviet trade vessel, Zvezda.

Rinn's quest for equality and balance in an unyieldingly prejudiced time is well worth following. From the beginning, one is caught up in her struggles with life and death; the final page less an ending than a yearning to ask, "What next?"

Rinn's Star is the second novel from this very capable author, and although it is my first encounter with Paula E. Downing, it will most definitely not be my last.

THE STONE GIANT by James P. Blaylock (Ace, 1989, 264 pp., $3.95, ISBN 0-441-28702-6)
Reviewed by Pascal J. Thomas

This book is another chapter on the lightweight side of Blaylock's career—a series of humorous fantasies involving a variety of magical creatures, and sea-going or airborne contraptions. However, it has more in common than one would believe with more ambitious (and acclaimed books) such as **The Last Coin**; namely, the central character, Theophile Escarget, who represents a fancier version of **The Last Coin**'s Andrew Vanbergen, with the same position in life: an unpractical dreamer who keeps being pestered by a wife who stands for the cruelty of the real world.

The difference is in the amount of fantasy: here, most of the wild imaginings of Theophile (or his favorite author, G. Smithers) will come true, and one moves in an almost boring diversity of little people, dwarves, elves, goblins and witches, each with their specific characteristics. On one of those rare occasions where poor Escargot "saw things particularly clearly...as if the whole world...was laid out in color in a G. Smithers' book on one big, illustrated page", he comes up with a fair description: "Henny-penny men mined fire quartz beneath the sea; elves built marvelous contraptions for people like Captain Perry to steal; goblins raged around in an effort to see that nothing ever ran particularly right for anyone, including themselves; dwarves dug out rubies and emeralds and baked bread and acted very sure of themselves; and men—what did they do?—made fools of themselves, more often than not, while putting on airs."

I wish Escargot spent more of the book in such a reflective mood; he starts out as an overgrown child, every bit as confused as mankind as he sees it. It's too bad in a way that he finally turns into an able adventurer, and spends so much time unraveling the wrongdoings of his dwarf Nemesis and overcoming the mayhem caused by the plot-device goblins. The elves, meanwhile, serve as reminder of science fiction and its own mechanical devices—here represented by a submarine called the Omen (I couldn't help being reminded of Jules Verne's Captain Nemo). The novel is a good read, always humorous, thanks to Blaylock's playful meandering, but lacks some depth (notwithstanding the Omen's brave performance).

TIME AND CHANCE by Alan Brennert (Tor, 1990, 261 pp., $17.95, ISBN 0-312-93192-1)
Reviewed by Pascal J. Thomas

Alan Brennert was briefly one of SF's promising new writers, but quickly dropped out. Now he has a career as a screenwriter, but he has not completely left us—a few years ago, Tor published **Kindred Spirits**, a pleasant mix of romance and ghost story.

This new novel, **Time and Chance**, draws on Brennert's experience with the entertainment industry. It concerns Richard Cochrane, a TV and stage actor living in New York, who has a reasonably successful life, but when his mother dies, he realizes how lonesome he has become, and how estranged from his hometown of Appleton, New Hampshire. At that point he unwittingly slips into an alternate world where he meets his alter ego, Rick, who has remained in Appleton to marry the girl he got pregnant—and they decide to trade places, Rick having grown embittered and aggressive from a dozen years of provincial dullness and repressed hopes. From then on, the book follows the parallel paths of Rick and Richard as they try to cope with a world they only dreamed of.

The book is well-written, with a lot of excellent detail, and emotionally involving. I thought some of the Appleton sentimental scenes dragged on a bit, but that's nitpicking, and the book should do well with the 'mainstream audience' it seems to be aimed at. However, SF's modest influence on the work doesn't reduce itself to the alternate-world device: the strategies adopted by each character as they try to cope with their new world bear some resemblance with the frantic quest for information encountered in first-contact stories—except that Rick and Richard are meeting an alien which is themselves after thirteen years of a different life.

But even when looking at the alternate world theme from an SF point of view, one cannot separate it from the questions of determinism and free will; what better way to affirm the possibility of human choice that to say that the might-have-been actually is? In **Time and Chance**, the free choices of the characters are matched with the result yielded by the alternative. Even if Richard's life clearly has made him the better of the pair (Brennert takes sides there, the symmetry is far from perfect), in both worlds free will stumbles onto the problem of substance abuse—alcohol in New Hampshire, cocaine in New York—and the anger and destruction of social ties it brings with it. It makes the book more topical, and even stronger. You may view it in the same light as Mike McQuay's **Memories**, Ken Grimwood's **Replay** or Iain Banks' **The Bridge**, as science fiction turned around to play on the inner stage of a person's life and emotions; and at that it succeeds extremely well.■

STAFF NEWS

Poul Anderson turned in **Star of the Sea**, a short novel in the "Time Patrol" series, to Tor. It will be published as part of a four-part book omnibus edition, **The Time Patrol**. His article, "What Works for Me in Writing Science Fiction," appeared in the January issue of *The Writer*.

Michael Bishop edited the twenty-fifth anniversary issue of the annual Nebula Awards anthology, **Nebula Awards 25**. A story called "Life Regarded as a Jigsaw Puzzle of Highly Lustrous Cats", will be in an upcoming issue of *Omni*.

Richard Geis' announcement that *The Geis Letter* ceases publication with the sixth issue, and that, "Due to vision problems, I am no longer able to read and review science fiction, fantasy, or horror novels," has apparently led to a higher level of concern by many fans than is warranted. Dick reported recently that his vision is not totally failing, although reading for extensive periods is very difficult.

Doug Fratz has had the beginning of his television career repeatedly postponed; three times in the past year he has had to turn down an offer or back out of a commitment to appear on the local Northern Virginia cable station Channel 33, Arlington Community Television, on their monthly science fiction talk show, *Fast Forward*, due to other pressing commitments.

In The Frame, the Los Angeles-based media newspaper, published "The Colorization of Black-and-White Films", an article by *Nancy Hayes*.

Jonathan V. Post was featured in an episode of the PBS-Television documentary series **By The Year 2000** entitled "Brave New Robots". He was one of those interviewed by Steve Ditlea in an article about the utility of hydrogen ice in spacecraft structure and fueling, published in the January 1991 issue of *Omni*.

Darrell Schweitzer is now the sole editor of *Weird Tales*. His short story, "Savages", will appear in **Masques IV**, edited by J. N. Williamson.

Pulphouse has accepted a short story by *Anthony Trull*, "The Perfused Dissident".■

POST *(continued from page 22)*

dematerialized modes of organization (based on dust clouds or an e+e- plasma?) capable of self-replication. If radiant energy production continues without limit, there remains hope that life capable of using it forever can be created."

Life forever! What a vision, and yet that is the best guess we can make, based upon current models of cosmology and quantum mechanics. It would be a very diffuse, dilute universe for life, to be sure. The ambiplasma would have an initial density of no more than one particle per cubic light year, so that the swiftest thought would take years to complete. But what are mere years when you have all eternity? Time itself would be redefined to fit the decelerando rhythm of subjectivity.

Some entities in that supremely distant age will drift through infinity in a haze of nostalgia. They will remember, simulate, and relive the gloriously hot, fast, dense days when life was solid, and planets were the stage.

Can you really be sure that you are here now, clutching this magazine in your hands? Or are you just a dreamy simulation of unimaginably distant positrons?

And if this prediction turns out to be incorrect, please tap me on the shoulder about 10^{100} years from now and remind me that this column in *QUANTUM* was only science fiction after all!

****** The End ... if there is one ... ******

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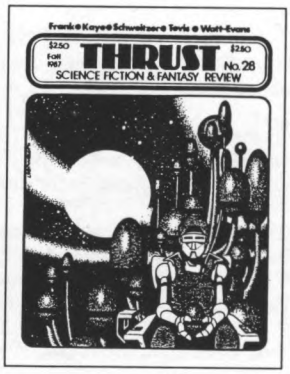

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